Comments Received on the 2010 Draft ROEs for the Lake Tapps Water Rights and Supply Project

Water Right Applications S2-29920, R2-29935, and S2-29934 and Water Right Change Application CS2-160822CL

Comment Period – May 7, 2010 to June 30, 2010.

Comment Letters (in alphabetical order):

Cascade Water Alliance
Kenneth Castile
King County
Lake Tapps Community Council
Muckleshoot Indian Tribe
Puyallup Tribe of Indians

CASCADE
WATER ALLIANCE

June 16, 2010

Tom Loranger
Washington State Department of Ecology
P.O. Box 47775
Olympia, WA 98504-7775

Re: Comments on Draft Reports of Examination for Lake Tapps Water Rights; Application Nos. S2-29920(A), S2-29920(B), R2-29935, S2-29934, and Change to Claim No. 160822

Dear Tom:

Please accept this letter and the attachment as the initial comments of Cascade Water Alliance on the draft Reports of Examination (ROEs) for the above Lake Tapps water rights applications. The following comments are intended to serve two purposes: 1) to express Cascade's interests in securing municipal water rights with acceptable terms and conditions, and 2) to make sure that we can honor our existing agreements with the Muckleshoot Indian Tribe, the Puyallup Tribe of Indians, the Lake Tapps Community Council, and the Cities of Auburn, Bonney Lake, Buckley, and Sumner.

First, Cascade proposes some revisions to the standard "provisions and conditions" in the ROEs. Specific revisions to the conditions are set forth in the attachment, and in summary they cover the following.

- In Condition 5 regarding recreational lake levels, we propose text to clarify Cascade's obligations to maintain recreational lake levels in the event that the 2009 Agreement Regarding Lake Tapps does not enter into force and effect. In March 2004, the Lake Tapps Community entered into the *Agreement Regarding Reservoir Management Between Puget Sound Energy and the Lake Tapps Community* ("2004 Community Agreement"). Under the Asset Purchase Agreement, Cascade took assignment of the 2004 Community Agreement. In May 2009, the Lake Tapps Community entered into an agreement with Cascade called the *2009 Agreement Regarding Lake Tapps between Cascade Water Alliance and the Lake Tapps Community* ("2009 Community Agreement"). As the Lake Tapps Community Council has pointed out in comments on the draft Environmental Impact Statement (DEIS), the 2009 Community Agreement does not become effective until both Cascade and the Community Council have "accepted" the final water rights decisions. Until that time, the 2004 Community Agreement remains in effect.

- In Condition 20 regarding emergency operations, we suggest minor revisions to define more specifically what constitutes an emergency.

- In Condition 21 regarding Ecology review and approval process, we suggest including a cross reference to other conditions for clarity.

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Second, we suggest a technical edit to the ROE "cover sheet" for S2-29920(B). As a permit, any unused water in the Reserved Water Program would technically be subject to cancellation (not relinquishment, which applies to perfected water rights). The specific edit is as follows:

> **7. Subject to ~~Relinquishment~~ Cancellation on January 1, 2031.**
> Ecology approval for any water rights using the Regional Reserved Water Program must be secured by December 31, 2030. Any portion of the permit for the Regional Reserved Water Program that has not been allocated in conjunction with a water right approved by Ecology shall be ~~relinquished~~ cancelled on January 1, 2031.

Cascade intends to make a similar revision in the relevant chapter of the Final EIS to reflect disposition of any unused reserved water.

Finally, Ecology requested comments on Condition 22, including an alternative "adaptive management strategy" text proposed by a "stakeholder." Cascade is comfortable with the language proposed by Ecology in the DROEs. The alternative language, however, raises a range of concerns and is not inappropriate.

The stakeholder's alternative "adaptive management strategy" effectively proposes a reopener condition that is unprecedented in state water resources policy. The alternative Condition 22 would undermine the certainty to which a water right holder is entitled in a water right. As such, significant questions about Ecology's authority would be raised by the alternative proposal. In addition, the alternative proposal calls for reopening if certain matters are "judicially determined." Although the meaning and intent of this clause is not clear, the clause could have the effect of unsettling the careful balancing of interests that is achieved by Cascade's agreements with other parties. The judicial determination clause raises troubling questions about whether the provision is intended as a precursor to future litigation. We doubt that it is appropriate for Ecology to include this sort of provision – that is equivalent to a remedy to be sought in an appeal – in an ROE.

Thank you for the opportunity to comment on the draft reports of examination.

Sincerely,

Michael Gagliardo
Director of Planning

[Revisions to standard conditions of Lake Tapps DROEs.
Additions shown by underline, deletions by ~~strikethrough~~.]

PROVISIONS AND CONDITIONS

The Permit Holder must meet the provisions and conditions of this section. These provisions and conditions apply at permit issuance, except as noted in the individual condition.

* * *

5. Recreational Lake Levels.

The Permit Holder shall maintain lake levels in Lake Tapps Reservoir according to the schedule established below~~;~~ or as mutually agreed by the Permit Holder and the Lake Tapps Community consistent with the 2009 Agreement Regarding Lake Tapps (Cascade 2009) if said agreement takes effect. "Normal Full Pool" is defined as a reservoir water level between 541.0 feet and 542.5 feet National Geodetic Vertical Datum 1929 ("NGVD 29") as measured at USGS gage 12101000 – Lake Tapps near Sumner, or as mutually agreed by the Permit Holder and the Lake Tapps Community consistent with the 2009 Agreement Regarding Lake Tapps (Cascade 2009). Permit Holder shall notify Ecology in accordance with Condition 21 of any change to the definition of Normal Full Pool or the schedule below, which change(s) shall not be inconsistent with other conditions of this water right.

a) The Permit Holder shall maintain Normal Full Pool from April 15 through September 30 of each year until May 13, 2039 or Permit Holder's commencement of the use of Lake Tapps Reservoir for municipal water supply, whichever comes later.

b) Thereafter, the Permit Holder shall:

   i) Maintain Normal Full Pool from April 15 through September 15; and

   ii) Maintain Normal Full Pool from September 16 through September 30 of each year more than ninety percent (90%) of the time, measured by the number of days (i.e., no more than fifteen (15) days in a rolling ten (10) year period of time) below the lower parameter of the Normal Full Pool, starting with the first calendar year in which lake levels fall below the lower parameter of the Normal Full Pool.

c) The Permit Holder shall make reasonable efforts to maintain Normal Full Pool through October 31 in all years.

d) Within the above-described time periods, operational variances may be required due to forecasts or available precipitation, any necessary milfoil control, or the terms and conditions of this authorization or of applicable law.

In the event that the 2009 Agreement Regarding Lake Tapps does not take effect, then Permit Holder shall maintain lake levels in Lake Tapps Reservoir consistent with the 2004 Agreement Regarding Reservoir Management Between Puget Sound Energy and the Lake Tapps Community (Cascade 2009).

* * *

20. Emergency Operations.
Permit conditions regarding or affecting operation of Lake Tapps Reservoir and related facilities do not apply and shall be waived to the extent that emergency conditions require or as ordered by a court or a state or federal agency ~~governmental authority~~ with jurisdiction. The Permit Holder shall notify Ecology of any emergency operations in accordance with Condition 21. Emergency conditions means a temporary circumstance or condition caused by a natural disaster, accident or physical damage, or other extraordinary event that is not avoidable by the exercise of reasonable diligence.

21. Ecology Review and Approval Process
This provision defines two processes for communicating with Ecology for compliance with the provisions of this water right, including conditions 1, 2, 4, 5, 6, 7, 8, 10, 11, and 20.

1. Notify Ecology
Permit Holder shall provide notice in writing to Ecology's Southwest Regional Office Water Resources Program Supervisor, or other staff identified by Ecology, and shall ensure that Ecology receives the notice. This provision does not limit Ecology's legal authority to act.

2. Ecology Review and Approval
Permit holder shall submit the required information for Ecology's review, comment, and approval. The information shall be submitted in writing to Ecology's Southwest Regional Office Water Resources Program Supervisor, or other staff identified by Ecology, and Permit Holder shall ensure that Ecology receives the information. If Permit Holder does not receive a response from Ecology within 30 days after Ecology has received the information, Permit Holder may presume Ecology has not denied any request included with the submitted information. Ecology may alert the Permit Holder that Ecology requires additional time for review, comment, and approval.

June 8, 2010

To:

Thomas Loranger
Section Manager
Water Resources Program – Dept. of Ecology
Southwest Region
PO Box 47775
Lacey, WA 98504-7775

Cc via Email: (1) Adam W. Gravely, Attorney representing Cascade Water Alliance, agravely@GordonDerr.com; (2) Elizabeth Thomas, Attorney representing the Lake Tapps Community Council, lizthomas@klgates.com; (3) Leon Stucki, Vice President of the Lake Tapps Community Council, LStucki@Future-Tech.com; (4) Chuck Clarke, CEO of Cascade Water Alliance, cclarke@cascadewater.org; (5) Michael A. Gagliardo, Director of Planning for Cascade Water Alliance, mgagliardo@cascadewater.org; (6) Richard Hildreth, Mayor of Pacific, rhildreth@ci.pacific.wa.us; (7) Pete Lewis, Mayor of Auburn, plewis@auburnwa.gov; (8) Owen Reese, Consulting Engineer for Aspect, oreese@aspectconsulting.com; (9) Senator Pam Roach, State Senator, roach_pa@leg.wa.gov; (10) Rep. Christ Hurst, Representative for the 31st District, hurst.christopher@leg.wa.gov;

Subject: Draft of Report of Examination, Application Number S2-29920(A), attachment A to this letter

References: (a) White River Management Agreement between Tribes and CWA, dated August 6, 2008
(b) 2009 Agreement Regarding Lake Tapps between Cascade Water Alliance and the Lake Tapps Community
(c) State Dept. of Ecology Report of Examination, WRTS File #CS2-160822CL

Dear Sir:

This letter is a critique of the subject Draft of Report of Examination (DROE) and is intended to lead to a modification of that draft prior to your official release. There are several other DROEs involved (S2-29920(B), S2-29934, CS2-160822CL, R2-29935) all of which are interrelated and affected by these comments and recommendations. Because S2-29920(A) is "superior in priority" to S2-29920(B) and related to the others I have chosen the subject DROE as the draft to address my

comments even though it should be affective to all the listed DROEs and the references (a) through (c) above. The subject DROE is very complete and detailed; however, a few changes are recommended before final approval is given. Below are comments, which are background that have led the undersigned to the recommendations, which follow.

Comments:

1. Lake Loss
   In evaluating the feasibility of maintaining Lake Tapps at the proper lake levels, during the recreational period, the amount of lake loss is a very important part of the formula for the evaluation. There has been a difference of opinion on the values to be used for lake loss, one by Aspect Consulting and the other by the undersigned. Both have arguments for and against for which an understanding can, quite easily, be resolved. Attachment B is an illustration showing four curves, which illustrate a computation of actual lake losses, during the summer months, for the years 2004, 2005, 2006 and 2007. It also shows the lake loss, which was formally used by PSE (65 cfs), that which has been used by the undersigned (65 cfs) and that which has been used by Aspect Consulting. These curves were derived using the gauge readings at the inlet and outlet (to the lake), subtracting the water flow diverted at the fish screens, allowing for the rise and fall of the lake, and then computing the resultant lake loss. Aspect Consulting derived lake loss from a more detailed analysis using established criteria for water seepage, rain runoff, etc. Their numbers for lake loss were variable throughout the year with the month of August being 28.5 cfs. Lake Tapps is a very large lake with variable inputs and outputs that affect the lake loss. One of these variable outputs is the immense lake bottom and it's ability to retain water. To illustrate this point, over thirty years ago, PSE attempted to add "Extension Lake" to the Lake Tapps reservoir (Satellite image in attachment C). The porosity of the lake bottom of Extension Lake (some call it "Leaky Lake") was such that even with corrective measures they could not get the lake to retain sufficient water to sustain the lake elevations of Lake Tapps without a large penalty in lake loss. Additional evaluation of existing conditions for Lake Tapps, using accurate instrumentation, and accounting for all the known variables, should be done.

2. Warming Trend
   Climate change was not added to either the Aspect Consulting model or the work done by the undersigned. As it was pointed out

in the Investigators Report (S2-29920(A)), “Warming in the western mountains of North America is projected to cause decreasing snowpack, more winter flooding and reduced summer flows ---.” “Summer flows are predicted to decline over time, decreasing by 17.8% by 2025.” “It would be wise for Cascade to incorporate adaptive management measures into the project to allow for adaption to the potential impacts of climate change.” Monthly averaging of historical White River flow rates, for 50 years, indicates a decline in river flow rates of approximately 100 cfs during August and September.

3. Fish Biology
   The undersigned does not claim to be an expert (by any means) of the science of understanding the fish in the White River; however, I was exposed to many of the problems when I served on the “Biology Committee” for the Lake Tapps Task Force. The science of forecasting when and how the fish will behave in the White River is full of very flexible data. For example, predicting that there will be a predetermined number of fish migrating up the river, requiring 650 cfs of river flow, the first week in August could change to the last week in August, etc. It is even more unpredictable to estimate what might be required to support the fish on a daily basis. The tendency, in making fish behavior predictions, is to make them on the conservative side and to allow for the worst-case situations. How the estimates were accomplished, when the tribes determined the minimum White River In stream Flow requirements, is not known by the undersigned but they (the Tribes) may welcome some flexibility to those requirements to allow for the unpredictable events, which may occur.

4. Flood Control
   In January of 2009 the city of Pacific experienced a flood, which caused a large amount of damage. There was some operational error involved but the Core of Engineers was dealing with a maximum flood condition and had to release a large amount of water from Mud Mountain Dam. If 2000 cfs of White River flow could have been diverted into Lake Tapps it is very possible that the flood in the White River valley could have been avoided. The entire Lake Tapps diversion canal has been constructed to handle 2000 cfs of flow except for a “check valve” which was installed at the entrance to Lake Tapps 3 to 4 years ago. It was constructed to only handle less than 1000 cfs (some have indicated only 700 cfs). The Core of Engineers is presently designing and getting ready to build a new cement diversion dam to replace the very undependable log structure, which exists today. The dam and the check valve should be capable of handling the full 2000 cfs. The

undersigned understands that "flood control" is not part of this application but it is related and should be recognized.

5. Force Majeure
   The reference (a) agreement refers to Force Majeure and events, which may be labeled as such. There are two events, which should be added:

   I.4.c. A Force Majeure event whereby Cascade is requested to divert up to 2000 cfs into Lake Tapps in response to a predictable flood condition in the White River Valley. The forecast and request would have to be declared by the proper authorized agency after other flood preventative actions have taken place and when the lake is at a low lake level during it's wintertime condition.

   I.4.d. A Force Majeure event where there is insufficient water flow in the White River to: (1) maintain the minimum Lake Tapps lake level and comply with the Minimum Flows of paragraph B.2 or, (2) provide sufficient water to support the fish biology in the White River. If this is a predictable event, then committee review should be authorized to review the fish biology and migration count vs. the flow of water required on a daily basis. If the biological conditions and/or fish count is above or below that which has been anticipated then the committee should be able to authorize a reallocation of water.

6. Forecast of Lake Level
   The preliminary area of concern (for the Lake Tapps Community) is maintaining the lake above minimum level during the recreational period. A minimum amount of water flow, in the inlet canal, is required to counter the losses due to the fish screen diversion, outlet leakage, CWA water withdrawal, and normal lake losses. If there is insufficient water flow, in the inlet canal, to support these losses, then the lake level will go down. Attachment D is a study, which evaluates the water flow, in the inlet canal, for the month of August in 21 years (using data from the years 1978 through 1998). The first and second sheet (of attachment D) assumes that CWA does not with draw water from the lake. It concludes that in 6 out of 21 years (29%) there will not be sufficient water flow in the canal to keep the lake above the minimum level (541.0 ft. elev.). The third and fourth sheet (of the attachment D) assumes that CWA withdraws 90 cfs in August. It concludes that in 9 years out of 21 (43%) there will not be sufficient water flow in the canal. The fifth and sixth sheets (of attachment D) assume that CWA withdraws 117 cfs in August. It concludes that in 10 out of 21 years (48%) there will not be sufficient water flow in the canal. These numbers

may be modified several different ways. If you are to assume that CWA will immediately stop withdrawing from the lake when the lake level gets down to the minimum recreational level then the study will revert back to the conditions of sheets one and two. If you were to add in the warming trend requirement, then you would be back to sheets three through six. The study is very flexible but it does indicate that for 21 years the situation can be critical in 29% to 48% of the years in the month of August. The model produced by Aspect Consulting indicates: "Under the baseline, there will be sufficient water to maintain recreational levels from April 15 to September 30 in all years ---." Their model has three distinct differences in input values: (1) lake loss is much lower (28 vs. 65 cfs for Aug.), (2) the years evaluated are less (15 vs. 21) and, (3) the water flow used is 18 cfs higher (at gauge # 12098500).

7. Adaptive Management
   In the reference (a) agreement, it indicates that a Coordinating Committee be established. It prescribes the membership, the meeting conditions, mediation procedure, etc. In the reference (b) agreement it indicates that a Lake Management Team be established. In paragraph 22 of the reference (c) Report of Examination, it calls for an adaptive management procedure. "In the event that in-stream flow, recreational lake level, or municipal water supply objectives are not reliably met, Ecology shall consult with the permit holder to consider the reasons the objectives are not being met and identify possible changes in conformity with conditions of the water right." Additionally the stakeholder has proposed language, which ends: "--- beneficial uses may be altered and accordingly public interest considerations should be subject to re-evaluation." All of which indicates that all parties have recognized the need for future coordination and decision-making requirements.

8. Decision Flow Time
   Reference has been made to "Judicial Review" and referring items back to the responsible parties for further review and proposals for resolution. Both of these indicate extended flow times, which would not be reasonable in many situations. Estimates of river flow can be very marginal and not very reliable when dependant on short-term weather predictions and the many variables involved. To provide timely resolution, the adaptive management committee (referred to above) should have authorization to act, within reasonable time and value limits.

Conclusions and Recommendations:

1. Investigations and Forecasting
   CWA should be tasked to:
   (a) Further investigate lake loss for Lake Tapps. Accurate instrumentation should be provided to record critical inlet and outlet water flow data, which has a bearing on calculating lake loss for Lake Tapps. Other data, regarding weather, runoff, etc., that may affect lake loss, should be recorded on a timely basis. Data should then be correlated to analytical data and reasonable conclusions drawn.
   (b) Further investigate the warming trend and add a factor to all forecasting.
   (c) Provide annual forecasting for Lake Tapps. The frequency and detail of the forecasts should be dependant on the conditions derived for that particular year. A dry year would require more attention than a year with ample snow and moisture.

2. Adaptive Management
   CWA/Tribes/Others should be tasked to form a committee as recommended in reference (a) and (b). This committee should have authorization to resolve those issues, described above, in a timely fashion (paragraph 8 above). This committee should have the expertise and management capabilities to make decisions within reasonable limits, without having to negotiate with higher management.

3. Flood Control
   As previously mentioned, flood control is beyond the realm of this application; however, there are direct relationships, which should be addressed. The Core of Engineers should be requested to investigate the possibility of a Lake Tapps diversion of 2000 cfs. The communities, within the flood boundaries of the White River, should be very interested in this proposal.

Qualifications:

The undersigned graduated from the University of Washington with a Bachelor of Science Degree in Civil Engineering in 1953. I was a design engineer and a manager of design organizations within Boeing for 37 years. In 1999, I joined forces with several others in an attempt to resolve the Lake Tapps issues. I was a member of the Lake Tapps Task Force and two of it's committees, the Biology Committee and the Economics and Option Committee. I have been a member of the Save Lake Tapps Coalition and the Lake Tapps Community Council. In all of

those involvements I have conducted a multitude of studies involving Lake Tapps and the White River.

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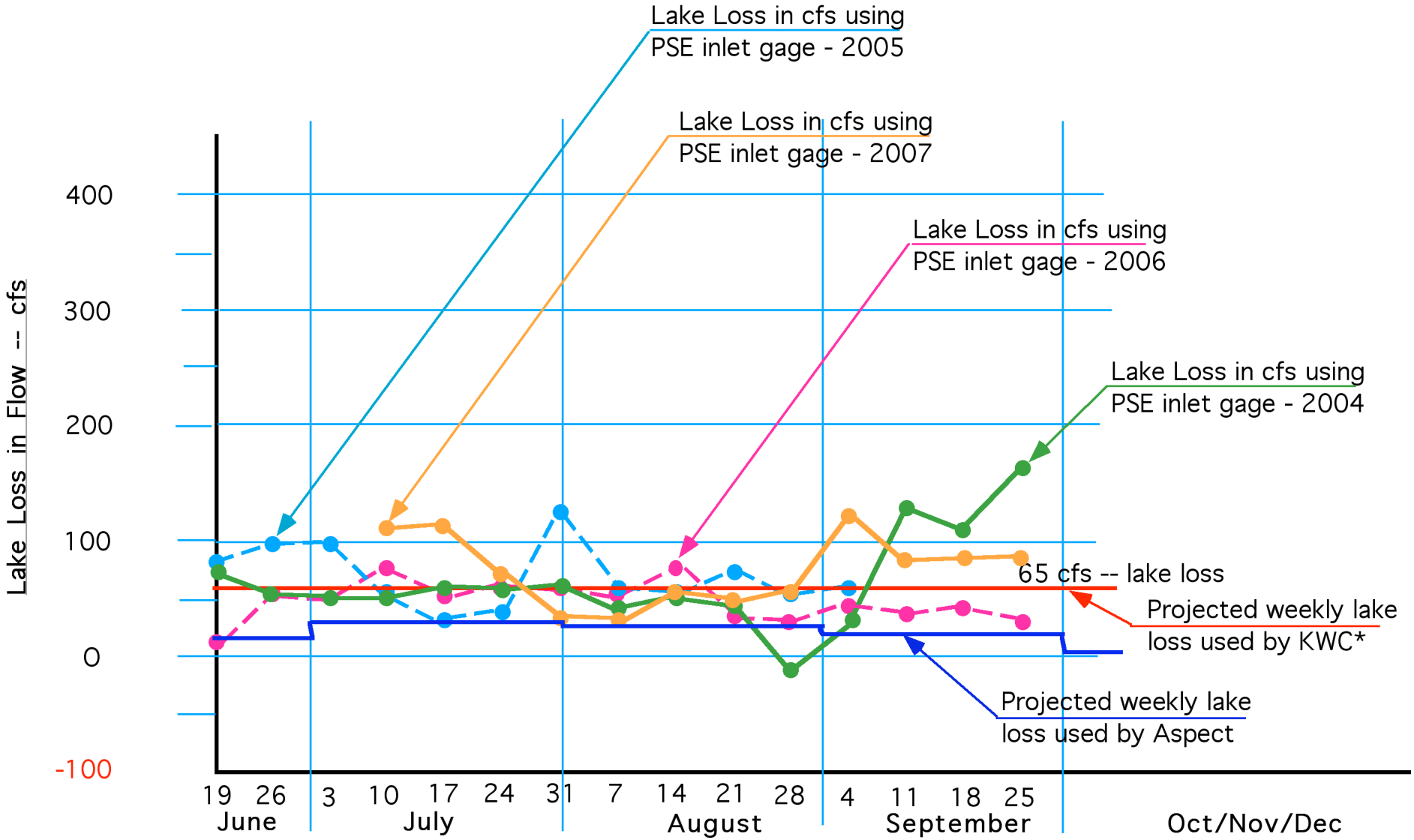
Attachment A: State Dept. of Ecology Report of Examination, application #S2-29920(A) – Note: not transmitted with the carbon copies
Attachment B: A Curve of Lake Tapps Loss vs. Mid June thru Sept. (4 yrs.)
Attachment C: A Satellite Image of Extension Lake by MapQuest
Attachment D: Lake Tapps Diversion Flow Data, 6 sheets

Lake Tapps Lake Loss (avg. weekly) Actual & Projected vs. Mid June thru Sept. (4 yrs)

Calculations used the difference between PSE inlet gauge** and outlet gauge #12101100 then corrected for lake level changes.



* Originally obtained from PSE (Bob Barnes) & later derived by averaging

**less flow from fish screens to White River

KWC 3/10/09
Rev. 5/17/10

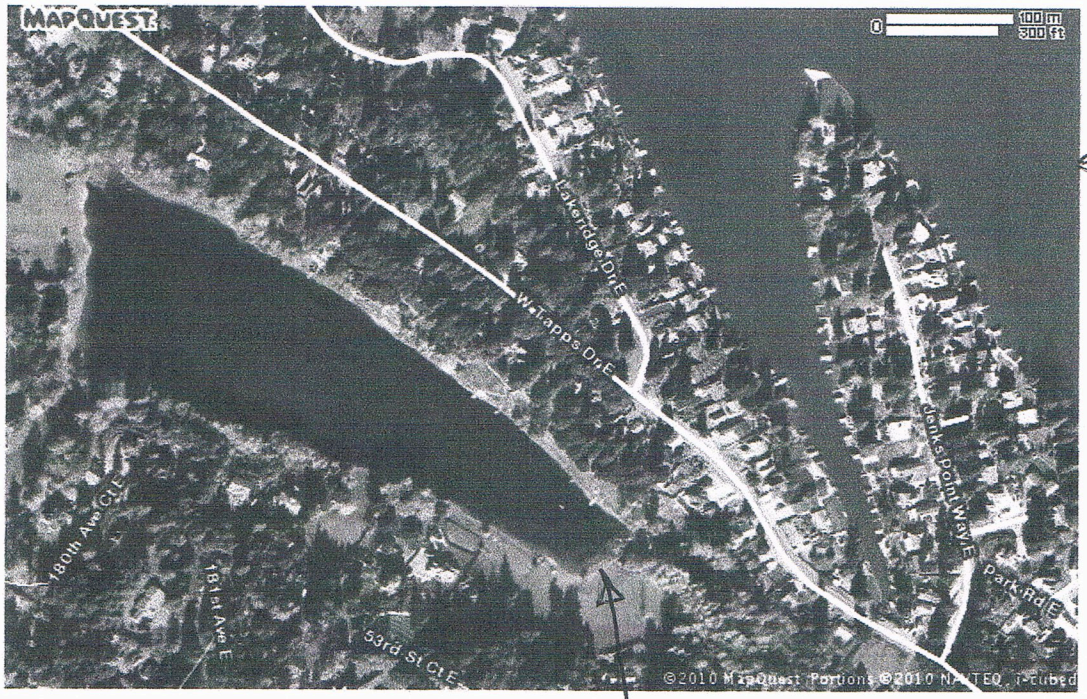
Attachment B

MAPQUEST

Map of Lake Tapps, WA

Notes

This was known as "Extension Lake." PSE could not get it to hold water to a level which would match Lake Tapps.



Lake Tapps

Extension Lake

Attachment C

Lake Tapps Computation Inputs (in cfs) for Zero WR Withdraw

Date/any Yr		Lake Tapps Lake Level Computation Inputs (in cfs)					
From	To	WR Min Flo	Fish Screen	Lake Loss	CWA Draw	Outlet Leak	Total Lk Out
1-Jan	14-Jan	650	30	65	0	5	100
15-Jan	31-Jan	525	30	65	0	5	100
1-Feb	14-Feb	550	30	65	0	5	100
15-Feb	End of Feb	500	30	65	0	5	100
1-Mar	14-Mar	550	30	65	0	5	100
15-Mar	31-Mar	725	30	65	0	5	100
1-Apr	14-Apr	775	30	65	0	5	100
15-Apr	30-Apr	825	30	65	0	5	100
1-May	31-May	875	30	65	0	5	100
1-Jun	30-Jun	800	30	65	0	5	100
1-Jul	23-Jul	800	30	65	0	5	100
24-Jul	31-Jul	650	30	65	0	5	100
1-Aug	6-Aug	650	30	65	0	5	100
7-Aug	31-Aug	500	30	65	0	5	100
1-Sep	30-Sep	500	30	65	0	5	100
1-Oct	31-Oct	500	30	65	0	5	100
1-Nov	14-Nov	500	30	65	0	5	100
####	30-Nov	550	30	65	0	5	100
1-Dec	14-Dec	550	30	65	0	5	100
15-Dec	31-Dec	600	30	65	0	5	100
			Average CWA Draw/yr		0		

Area of Concern

The above are the listed inputs (in cfs) for the lake input analysis for 20+ years

* The old outlet leakage has been a much higher number than that which is shown. This number is using an input from CWA & adding a factor.

** Ltr M.A. Gagliardo (CWA) to T. Loranger (State of WA) dated Aug. 12, 2008

***Assumes that CWA does not draw water from Lake Tapps in Aug.

****The lake losses used are those derived for the Community Council by Castile and match the losses used by PSE in earlier model exercises

WR Min Flo
is that minimum flo
will be allowed to p
the fish runs on the
River (Tribal Agree

Fish Screen
Is that amount of v
is diverted from the
provide for the fish
diverted back to th
the fish screens***

Lake Loss
is the total amount
lost to evaporation
and stream outflow
lake****

CWA Draw
is the total amount
withdrawn from the
Cascade Water Alli

Outlet Leak
is the total amount
which leaks throug
power station to th

Total Lk Out
The sum of Fish Sc
Loss, CWA Draw &

WATER AVAILABLE FOR DIVERSION

Assumes 5 cfs outlet leakage from the lake.

Divert Flow = **715** Tribe flows (Aug 1 - 6) = **650** 10%

Ave. CFS = 338

Divert Flow = **550** Tribe flows (Aug 7 & on) = **500** 10%

Assume the lake demand as: zero cfs (WR), 95 cfs (lake + fish screen) then any demand under100 cfs will lower lake level.

Flow under 100 cfs printed in red

(add gage tol.) (Gage Tol.)

Aug.	1998	1997	1996	1995	1994	1993	1992	1991	1990	1989	1988	1987	1986	1985	1984	1983	1982	1981	1980	1979	1978
1	485	885	165	119	106	535	146	295	365	0	192	0	50	161	655	675	565	115	215	143	71
2	385	855	135	154	123	545	112	295	252	0	131	0	127	164	635	615	60	110	183	59	167
3	325	845	85	163	191	565	39	305	229	0	118	0	189	157	565	535	295	100	158	0	203
4	365	885	31	172	175	555	34	325	259	0	140	33	132	154	465	505	243	85	121	0	375
5	465	915	52	156	138	525	23	315	278	0	162	41	79	153	435	465	0	75	80	0	285
6	465	1,065	5	125	46	465	23	345	285	35	108	15	73	425	345	475	445	120	0	0	179
7	444	1,200	164	510	196	560	249	560	403	254	215	181	291	1,040	438	630	420	346	181	142	332
8	333	970	206	396	195	480	132	550	385	248	221	234	323	850	460	640	560	406	228	159	356
9	312	890	271	230	158	419	38	530	393	194	257	328	328	630	550	660	580	500	207	148	392
10	327	870	283	215	151	382	89	349	408	144	271	305	310	530	590	640	500	520	266	182	398
11	346	860	337	186	196	342	167	249	480	98	0	182	264	173	560	650	396	480	299	212	362
12	369	880	274	160	227	330	244	238	470	87	0	132	241	207	560	550	295	448	319	194	344
13	417	890	219	126	237	324	307	232	480	72	269	189	255	600	420	520	305	400	295	212	374
14	460	890	250	114	242	288	298	222	398	74	277	158	271	330	340	520	350	436	262	212	230
15	414	940	244	126	221	239	199	275	295	37	262	79	227	330	305	520	275	470	183	170	680
16	265	860	199	109	170	254	125	330	218	0	242	42	188	300	315	430	240	450	177	218	560
17	168	760	141	178	139	245	168	352	205	3	264	32	144	160	366	380	235	394	162	266	236
18	108	710	86	125	144	267	212	341	260	60	148	33	147	104	330	345	230	322	259	188	205
19	89	650	54	76	145	260	155	335	198	102	146	47	165	334	255	310	245	310	88	153	175
20	118	630	59	75	86	277	78	280	260	101	139	67	160	198	205	280	340	265	111	148	120
21	188	620	34	76	62	246	51	248	460	208	116	0	160	69	205	270	420	170	62	194	145
22	221	580	34	83	0	197	0	313	437	219	111	0	156	26	240	260	355	135	76	236	200
23	209	570	13	83	0	224	0	196	261	184	148	0	134	0	245	285	290	155	109	142	180
24	146	570	0	61	0	216	0	120	188	76	186	480	112	0	185	260	265	220	423	65	326
25	115	500	0	54	0	228	0	52	162	32	198	59	120	0	140	235	265	155	65	60	356
26	101	510	0	45	23	173	0	19	100	20	201	89	165	0	145	215	270	62	58	76	170
27	89	530	25	15	0	168	0	35	80	29	223	66	241	434	230	205	225	30	183	164	110
28	102	436	870	20	13	160	0	217	88	4	223	91	332	620	250	235	180	6	41	131	55
29	144	377	218	25	0	133	0	358	150	0	230	67	309	67	160	305	140	50	0	126	55
30	146	340	236	20	0	139	0	375	289	5	164	83	195	110	150	540	125	110	0	142	140
31	127	320	144	0	0	134	0	243	208	0	121	0	126	14	130	530	78	54	232	109	308
Avg	**266**	**736**	**156**	**129**	**109**	**319**	**93**	**287**	**289**	**74**	**177**	**98**	**194**	**269**	**351**	**441**	**297**	**242**	**163**	**137**	**261**
Max	485	1,200	870	510	242	565	307	560	480	254	277	480	332	1,040	655	675	580	520	423	266	680
Min	89	320	0	0	0	133	0	19	80	0	0	0	50	0	130	205	0	6	0	0	55
SFD	8,248	22,803	4,834	3,997	3,384	9,875	2,889	8,899	8,944	2,286	5,483	3,033	6,014	8,340	10,874	13,685	9,192	7,499	5,043	4,251	8,089

6 yrs. in 21 years (29%) will lower the lake level for an extended period in Aug.

Lake Tapps Computation Inputs (in cfs) for Nom. WR Withdraw

Date/any Yr		Lake Tapps Lake Level Computation Inputs (in cfs)					
From	To	WR Min Flo	Fish Screen	Lake Loss	CWA Draw	Outlet Leak	Total Lk Out
1-Jan	14-Jan	650	30	65	0	5	100
15-Jan	31-Jan	525	30	65	0	5	100
1-Feb	14-Feb	550	30	65	0	5	100
15-Feb	End of Feb	500	30	65	0	5	100
1-Mar	14-Mar	550	30	65	0	5	100
15-Mar	31-Mar	725	30	65	0	5	100
1-Apr	14-Apr	775	30	65	0	5	100
15-Apr	30-Apr	825	30	65	0	5	100
1-May	31-May	875	30	65	0	5	100
1-Jun	30-Jun	800	30	65	0	5	100
1-Jul	23-Jul	800	30	65	0	5	100
24-Jul	31-Jul	650	30	65	0	5	100
1-Aug	6-Aug	650	30	65	90	5	190
7-Aug	31-Aug	500	30	65	90	5	190
1-Sep	30-Sep	500	30	65	90	5	190
1-Oct	31-Oct	500	30	65	0	5	100
1-Nov	14-Nov	500	30	65	0	5	100
15-Nov	30-Nov	550	30	65	0	5	100
1-Dec	14-Dec	550	30	65	0	5	100
15-Dec	31-Dec	600	30	65	0	5	100
			Average CWA Draw/y		13.5		

Area of Concern

The above are the listed inputs (in cfs) for the lake input analysis for 20+ years

* The old outlet leakage has been a much higher number than that which is shown. This number is using an input from CWA & adding a factor.

** Ltr M.A. Gagliardo (CWA) to T. Loranger (State of WA) dated Aug. 12, 2008

***Assumes that CWA draws water at a nom. rate from Lake Tapps in Aug.

****The lake losses used are those derived for the Community Council by Castile and match the losses used by PSE in earlier model exercises

WR Min Flo
is that minimum flo
will be allowed to pr
the fish runs on the
River (Tribal Agreen

Fish Screen
Is that amount of w
is diverted from the
provide for the fish
diverted back to the
the fish screens***

Lake Loss
is the total amount
lost to evaporation,
and stream outflow
lake****

CWA Draw
is the total amount
withdrawn from the
Cascade Water Allia

Outlet Leak
is the total amount
which leaks through
power station to the

Total Lk Out
The sum of Fish Scr
Loss, CWA Draw & C

WATER AVAILABLE FOR DIVERSION

Assumes 5 cfs outlet leakage from the lake.

Divert Flow = **715** Tribe flows (Aug 1 - 6) = **650** **10%**

Ave. CFS = 338

Divert Flow = **550** Tribe flows (Aug 7 & on) = **500** **10%**

Assume the lake demand as: 90 cfs (WR), 95 cfs (lake + fish screen) then any demand under190 cfs will lower lake level.

Flow under190 cfs printed in red

(add gage tol.) (Gage Tol.)

Aug.	1998	1997	1996	1995	1994	1993	1992	1991	1990	1989	1988	1987	1986	1985	1984	1983	1982	1981	1980	1979	1978
1	485	885	165	119	106	535	146	295	365	0	192	0	50	161	655	675	565	115	215	143	71
2	385	855	135	154	123	545	112	295	252	0	131	0	127	164	635	615	60	110	183	59	167
3	325	845	85	163	191	565	39	305	229	0	118	0	189	157	565	535	295	100	158	0	203
4	365	885	31	172	175	555	34	325	259	0	140	33	132	154	465	505	243	85	121	0	375
5	465	915	52	156	138	525	23	315	278	0	162	41	79	153	435	465	0	75	80	0	285
6	465	1,065	5	125	46	465	23	345	285	35	108	15	73	425	345	475	445	120	0	0	179
7	444	1,200	164	510	196	560	249	560	403	254	215	181	291	1,040	438	630	420	346	181	142	332
8	333	970	206	396	195	480	132	550	385	248	221	234	323	850	460	640	560	406	228	159	356
9	312	890	271	230	158	419	38	530	393	194	257	328	328	630	550	660	580	500	207	148	392
10	327	870	283	215	151	382	89	349	408	144	271	305	310	530	590	640	500	520	266	182	398
11	346	860	337	186	196	342	167	249	480	98	0	182	264	173	560	650	396	480	299	212	362
12	369	880	274	160	227	330	244	238	470	87	0	132	241	207	560	550	295	448	319	194	344
13	417	890	219	126	237	324	307	232	480	72	269	189	255	600	420	520	305	400	295	212	374
14	460	890	250	114	242	288	298	222	398	74	277	158	271	330	340	520	350	436	262	212	230
15	414	940	244	126	221	239	199	275	295	37	262	79	227	330	305	520	275	470	183	170	680
16	265	860	199	109	170	254	125	330	218	0	242	42	188	300	315	430	240	450	177	218	560
17	168	760	141	178	139	245	168	352	205	3	264	32	144	160	366	380	235	394	162	266	236
18	108	710	86	125	144	267	212	341	260	60	148	33	147	104	330	345	230	322	259	188	205
19	89	650	54	76	145	260	155	335	198	102	146	47	165	334	255	310	245	310	88	153	175
20	118	630	59	75	86	277	78	280	260	101	139	67	160	198	205	280	340	265	111	148	120
21	188	620	34	76	62	246	51	248	460	208	116	0	160	69	205	270	420	170	62	194	145
22	221	580	34	83	0	197	0	313	437	219	111	0	156	26	240	260	355	135	76	236	200
23	209	570	13	83	0	224	0	196	261	184	148	0	134	0	245	285	290	155	109	142	180
24	146	570	0	61	0	216	0	120	188	76	186	480	112	0	185	260	265	220	423	65	326
25	115	500	0	54	0	228	0	52	162	32	198	59	120	0	140	235	265	155	65	60	356
26	101	510	0	45	23	173	0	19	100	20	201	89	165	0	145	215	270	62	58	76	170
27	89	530	25	15	0	168	0	35	80	29	223	66	241	434	230	205	225	30	183	164	110
28	102	436	870	20	13	160	0	217	88	4	223	91	332	620	250	235	180	6	41	131	55
29	144	377	218	25	0	133	0	358	150	0	230	67	309	67	160	305	140	50	0	126	55
30	146	340	236	20	0	139	0	375	289	5	164	83	195	110	150	540	125	110	0	142	140
31	127	320	144	0	0	134	0	243	208	0	121	0	126	14	130	530	78	54	232	109	308
Avg	**266**	**736**	**156**	**129**	**109**	**319**	**93**	**287**	**289**	**74**	**177**	**98**	**194**	**269**	**351**	**441**	**297**	**242**	**163**	**137**	**261**
Max	485	1,200	870	510	242	565	307	560	480	254	277	480	332	1,040	655	675	580	520	423	266	680
Min	89	320	0	0	0	133	0	19	80	0	0	0	50	0	130	205	0	6	0	0	55
SFD	8,248	22,803	4,834	3,997	3,384	9,875	2,889	8,899	8,944	2,286	5,483	3,033	6,014	8,340	10,874	13,685	9,192	7,499	5,043	4,251	8,089

9 yrs. in 21 years (43%) will lower the lake level for an extended period in Aug.

Lake Tapps Computation Inputs (in cfs) for Max. WR Withdraw

Date/any Yr		Lake Tapps Lake Level Computation Inputs (in cfs)						
From	To	WR Min Flo	Fish Screen	Lake Loss	CWA Draw	Outlet Leak	Total Lk Out	
1-Jan	14-Jan	650	30	65	0	5	100	
15-Jan	31-Jan	525	30	65	0	5	100	
1-Feb	14-Feb	550	30	65	0	5	100	
15-Feb	End of Feb	500	30	65	0	5	100	
1-Mar	14-Mar	550	30	65	0	5	100	
15-Mar	31-Mar	725	30	65	0	5	100	
1-Apr	14-Apr	775	30	65	0	5	100	
15-Apr	30-Apr	825	30	65	0	5	100	
1-May	31-May	875	30	65	0	5	100	
1-Jun	30-Jun	800	30	65	0	5	100	
1-Jul	23-Jul	800	30	65	0	5	100	
24-Jul	31-Jul	650	30	65	0	5	100	
1-Aug	6-Aug	650	30	65	117	5	217	Area of Concern
7-Aug	31-Aug	500	30	65	117	5	217	
1-Sep	30-Sep	500	30	65	117	5	217	
1-Oct	31-Oct	500	30	65	0	5	100	
1-Nov	14-Nov	500	30	65	0	5	100	
15-Nov	30-Nov	550	30	65	0	5	100	
1-Dec	14-Dec	550	30	65	0	5	100	
15-Dec	31-Dec	600	30	65	0	5	100	
			Average CWA Draw/yr		17.55			

The above are the listed inputs (in cfs) for the lake input analysis for 20+ years

* The old outlet leakage has been a much higher number than that which is shown. This number is using an input from CWA & adding a factor.

** Ltr M.A. Gagliardo (CWA) to T. Loranger (State of WA) dated Aug. 12, 2008

***Assumes that CWA draws water at a max. rate from Lake Tapps in Aug.

****The lake losses used are those derived for the Community Council by Castile and match the losses used by PSE in earlier model exercises

WR Min Flo
is that minimum flow will be allowed to pr the fish runs on the River (Tribal Agreer

Fish Screen
Is that amount of wa is diverted from the provide for the fish v diverted back to the the fish screens****

Lake Loss
is the total amount o lost to evaporation, and stream outflow lake****

CWA Draw
is the total amount o withdrawn from the Cascade Water Allia

Outlet Leak
is the total amount o which leaks through power station to the

Total Lk Out
The sum of Fish Scr Loss, CWA Draw &

WATER AVAILABLE FOR DIVERSION

Assumes 5 cfs outlet leakage from the lake.

Divert Flow =	715	Tribe flows (Aug 1 - 6) =	650	10%	
Divert Flow =	550	Tribe flows (Aug 7 & on) =	500	10%	
(add gage tol.)				(Gage Tol.)	

Ave. CFS = 338

Assume the lake demand as: 117 cfs (WR), 95 cfs (lake + fish screen) then any demand under 217 cfs will lower lake level.

Flow under 217 cfs printed in red

Aug.	1998	1997	1996	1995	1994	1993	1992	1991	1990	1989	1988	1987	1986	1985	1984	1983	1982	1981	1980	1979	1978
1	485	885	165	119	106	535	146	295	365	0	192	0	50	161	655	675	565	115	215	143	71
2	385	855	135	154	123	545	112	295	252	0	131	0	127	164	635	615	60	110	183	59	167
3	325	845	85	163	191	565	39	305	229	0	118	0	189	157	565	535	295	100	158	0	203
4	365	885	31	172	175	555	34	325	259	0	140	33	132	154	465	505	243	85	121	0	375
5	465	915	52	156	138	525	23	315	278	0	162	41	79	153	435	465	0	75	80	0	285
6	465	1,065	5	125	46	465	23	345	285	35	108	15	73	425	345	475	445	120	0	0	179
7	444	1,200	164	510	196	560	249	560	403	254	215	181	291	1,040	438	630	420	346	181	142	332
8	333	970	206	396	195	480	132	550	385	248	221	234	323	850	460	640	560	406	228	159	356
9	312	890	271	230	158	419	38	530	393	194	257	328	328	630	550	660	580	500	207	148	392
10	327	870	283	215	151	382	89	349	408	144	271	305	310	530	590	640	500	520	266	182	398
11	346	860	337	186	196	342	167	249	480	98	0	182	264	173	560	650	396	480	299	212	362
12	369	880	274	160	227	330	244	238	470	87	0	132	241	207	560	550	295	448	319	194	344
13	417	890	219	126	237	324	307	232	480	72	269	189	255	600	420	520	305	400	295	212	374
14	460	890	250	114	242	288	298	222	398	74	277	158	271	330	340	520	350	436	262	212	230
15	414	940	244	126	221	239	199	275	295	37	262	79	227	330	305	520	275	470	183	170	680
16	265	860	199	109	170	254	125	330	218	0	242	42	188	300	315	430	240	450	177	218	560
17	168	760	141	178	139	245	168	352	205	3	264	32	144	160	366	380	235	394	162	266	236
18	108	710	86	125	144	267	212	341	260	60	148	33	147	104	330	345	230	322	259	188	205
19	89	650	54	76	145	260	155	335	198	102	146	47	165	334	255	310	245	310	88	153	175
20	118	630	59	75	86	277	78	280	260	101	139	67	160	198	205	280	340	265	111	148	120
21	188	620	34	76	62	246	51	248	460	208	116	0	160	69	205	270	420	170	62	194	145
22	221	580	34	83	0	197	0	313	437	219	111	0	156	26	240	260	355	135	76	236	200
23	209	570	13	83	0	224	0	196	261	184	148	0	134	0	245	285	290	155	109	142	180
24	146	570	0	61	0	216	0	120	188	76	186	480	112	0	185	260	265	220	423	65	326
25	115	500	0	54	0	228	0	52	162	32	198	59	120	0	140	235	265	155	65	60	356
26	101	510	0	45	23	173	0	19	100	20	201	89	165	0	145	215	270	62	58	76	170
27	89	530	25	15	0	168	0	35	80	29	223	66	241	434	230	205	225	30	183	164	110
28	102	436	870	20	13	160	0	217	88	4	223	91	332	620	250	235	180	6	41	131	55
29	144	377	218	25	0	133	0	358	150	0	230	67	309	67	160	305	140	50	0	126	55
30	146	340	236	20	0	139	0	375	289	5	164	83	195	110	150	540	125	110	0	142	140
31	127	320	144	0	0	134	0	243	208	0	121	0	126	14	130	530	78	54	232	109	308
Avg	**266**	**736**	**156**	**129**	**109**	**319**	**93**	**287**	**289**	**74**	**177**	**98**	**194**	**269**	**351**	**441**	**297**	**242**	**163**	**137**	**261**
Max	485	1,200	870	510	242	565	307	560	480	254	277	480	332	1,040	655	675	580	520	423	266	680
Min	89	320	0	0	0	133	0	19	80	0	0	0	50	0	130	205	0	6	0	0	55
SFD	8,248	22,803	4,834	3,997	3,384	9,875	2,889	8,899	8,944	2,286	5,483	3,033	6,014	8,340	10,874	13,685	9,192	7,499	5,043	4,251	8,089

From: Monthie, Dave [mailto:Dave.Monthie@kingcounty.gov]
Sent: Wednesday, June 30, 2010 4:14 PM
To: Loranger, Thomas (ECY); jmar461@ecy.wa.gov
Cc: mgagliardo@cascadewater.org; Rick Kirkby
Subject: Comments on Lake Tapps ROE
Importance: High

I tried using Ecology's official online comment form, but never got a message or other indication that after I hit "submit" that the comments actually were transmitted. So I cut and pasted from the online submittal form into a Word document, and they are attached, such as they are.

One note: this may be the exception where you have multiple documents for a single project, but it would be useful to have a way to use your online process to make the same comment—if appropriate—for all documents. For instance, the comment on Ecology's description of Place of Use.

Feel free to contact me if you have any questions.

Dave Monthie
Regional Water Policy Analyst
206.296.3782
206.296.3749 (fax)
Note that my email address is now dave.monthie@kingcounty.gov

King County Comments on draft documents for the Lake Tapps Report of Examination
June 30, 2010

S2-29934

Concerns
King County has long had an interest in the disposition of the 2500 acres of land owned by Puget Sound Energy and held--per FERC requirements under the water right claim for hydropower purposes--as an important riparian wildlife corridor along the Reservation Reach of the White River. Roughly 1100 acres of this land is in King County. King County did a study several years ago with regard to the potential acquisition or preservation of the portion of the land in King County, and concluded that acquisition was not appropriate at that time. PSE has sold its hydropower facility, and assigned its water right claim, to Cascade. Ecology is proposing to change the purpose of use under the claim from hydropower to other uses (mainly environmental uses) that to some extent had been de facto uses under the operation of the hydropower facility. The potential impact on the riparian wildlife corridor was not addressed by Cascade in the draft EIS prepared by Cascade for Ecology for this water rights action. In response to the County's comment, Cascade has responded that PSE was required, in their Asset Purchase Arrangement, to arrange for the preservation of 500 of these 2500 acres, and that Puget has recorded restrictive covenants on this 500 acres. Will the proposed change in the water rights claim result in the remaining 2000 acres of wildlife corridor being lost for this purpose, in the absence of any condition being imposed by Ecology for its retention? If so, is this not considered a significant environmental impact by Ecology? If it is, should mitigation be required?

Support
We fully support the proposed change in uses so that the environmental benefits to be provided will have clear and explicit authorization.

S2-29920

Concerns
King County intervened in the appeals to the PCHB on the preceding draft ROE issued by Ecology in 2003 for Lake Tapps, in large part because of its failure to require compliance with relevant planning processes prescribed in state law--both the planning for regional supplies under the Public Water System Coordination Act (chapter 70.116 RCW), and compliance with individual water utilities' inclusion of reclaimed water in a water system plan as required in chapter 90.46 RCW (the Reclaimed Water Act). We would like to note with appreciate Cascade's support for the regional water planning process initiated by King County in 2005, and the inclusion by Cascade of reclaimed water as a potential source of supply in both its initial Transmission and Supply Plan (TSP) and the current TSP update. We request that proposed Condition 12 in Ecology's draft documents for all applications, which relate to meeting DOH planning

requirements, include a reference to complying with relevant planning requirements under chapter 70.116 as well.

Support
(1) We are pleased with the progress that Cascade has made over the past several years, particularly with tribal governments, local governments, and state and federal agencies, to address multiple resource management issues potentially associated with this project. We also appreciate Cascade's current leadership in moving forward with regional discussions on future water supply management strategies.
(2) We also note with approval the discussions of potential climate change and its effects on the White River/Lake Tapps water supply project, including maintenance of instream flows for fish. We appreciated Cascade's support for this work as part of the regional water planning process initiated by the County in 2005, and suggest that both Ecology and DOH require climate change impacts as a standard element of both water rights and water supply plan review and approval.

Other
The proposed place of use in all documents is the "service area" in the "most recent" DOH-approved water system plans of Cascade Water Alliance, City of Seattle, and City of Tacoma. The ROE should explicitly identify "service area" as the term defined in WAC 246-290-010. Note that Cascade has not done a water system plan as it is defined in WAC 246-290, but has done a "Transmission and Supply Plan" that has been approved by DOH, but is not treated by DOH as a water system plan. If the POU reference to "most recent" approved plan is to the plan most recently approved by DOH as of the date of issuance of the water rights document, the actual date (year) should be inserted. If the POU reference is intended to be a moving date--i.e, the service area identified in future water system plans--Ecology should note in the ROE that that type of description of a flexible place of use is currently being challenged as part of a lawsuit being considered by the Supreme Court.

K&L|GATES

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Suite 2900
Seattle, WA 98104-1158
T 206.623.7580 www.klgates.com

June 18, 2010

Elizabeth Thomas
liz.thomas@klgates.com

Via First Class Mail and
E-Mail: Thomas.Loranger@ecy.wa.gov
JEMA461@ecy.wa.gov

Mr. Tom Loranger
Washington Department of Ecology
PO Box 47600
Olympia , WA 98504-7600

Mr. Jeff Marti
Washington State Department of Ecology
PO Box 47775
Olympia, WA 98504-7775

Re: Comments on Reports of Examination

Dear Tom and Jeff:

Enclosed please find the comments of the Lake Tapps Community Council on the following draft reports of examination:

S2-29920 (A) – Draft Report of Examination, Source White River

S2-29920 (B) – Draft Report of Examination, Source White River

S2-29920 – Investigators report for S2-29920

CS2-160822CL – Draft Report of Examination for Change, Change of Purpose of Use.

Very truly yours,

Elizabeth Thomas

Enclosure

Cc: Lake Tapps Community Council

SE-15523 v1

Hon. Shawn Bunney
Hon. Chris Hurst
Jay Manning
Adam Gravley
T.C. Richmond
Michael Gagliardo

Comments of Lake Tapps Community Council on Draft Reports of Examination (ROEs) Relating to the Lake Tapps Reservoir and Supply Project

June 18, 2010

Introduction and Summary

The Lake Tapps Community Council (the "Community Council") appreciates the opportunity to review and comment on the following documents published by the Department of Ecology ("Ecology") in connection with the Lake Tapps Reservoir and Supply Project:

1. S2-29920 (A) - Draft Report of Examination, Source White River [for municipal water supply]
2. S2-29920 (B) - Draft Report of Examination, Source White River [for cities' reserved water]
    a. S2-29920 - Investigators report for S2-29920
    b. S2-29920 - Water Quantity and Water Quality Analysis for the Lake Tapps Water Right Applications
3. S2-29934 - Draft Report of Examination - Source Lake Tapps [for municipal supply]
4. CS2-160822CL - Draft Report of Examination for Change, Change of Purpose of Use [for Puget Sound Energy (PSE) water claim]
5. R2-29935 - Draft Reservoir Report of Examination [for storage]

The Community Council provides specific comments below on items 1, 2, 2(a), and 4 in the above list.

In general, the Community Council appreciates the very hard work that Ecology, the Cascade Water Alliance ("CWA") and other stakeholders have done in carefully analyzing and resolving the complex issues and competing interests implicated by the draft ROEs. In particular, the Community Council supports several features of the draft ROEs. They properly reflect priority of uses (reservoir levels take precedence over municipal supply). They also properly recognize that recreation is a type of beneficial use under PSE's claim.

Nevertheless, the Community Council has lingering concerns on two aspects of the draft ROEs. First, the Community Council strongly believes that any proposed dedication of water to the trust water rights program should NOT be addressed by these documents or at this time but instead should be addressed on a stand-alone basis in the future. Second, the ROEs should retain a provision for adaptive management to allow for a re-balancing of the public interest in the event that any of the three agreements that support CWA's municipal supply project is found to be contrary to the public interest.

Comments on Specific Documents

S2-29920 (A).

- Paragraph 19 requires CWA to apply for a donation to Trust Water Rights Program consistent with the Tribal Agreement. The Community Council objects to any requirement in the current ROEs reflecting CWA's agreement with the Tribes regarding Trust Water Rights Program for several reasons. First, by including this provision in advance of receiving an application, Ecology appears to prejudge the outcome. Second, the Community Council believes the terms of donation in the Tribal Agreement are too stringent and are likely to result in impairment. Third, the SEPA analysis in the DEIS of the proposed donation to the Trust program fails to provide an adequate analysis of the impacts of the donation; further SEPA analysis is required to determine whether the donation should be made.[1] Finally, a permanent donation by CWA of water rights to the trust program might under some circumstances contravene CWA's obligations under applicable reservoir management agreements to provide the Community with a right of first offer, prior to the transfer of certain project assets.[2]

- Paragraph 22 seeks comment on a stakeholder proposal for adaptive management. Specifically, the proposal allows Ecology to re-balance competing public interests in the event that CWA's contractual framework for exercising the water rights is found to be contrary to the public interest. The Community Council supports this approach to adaptive management because the entire suite of rights is premised on overriding

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[1] *See* the Community Council's comments on CWA's draft EIS, which stated in part:

> The Community Council's concern is that depending on how it is designed, the donation might have significant additional impacts. The application for a permanent donation has not yet been submitted, so it is impossible to determine how the amount to be donated will be calculated or whether the donation goes beyond providing "another legal mechanism to enforce the flow regime." Because the donation is an "independent" proposed action whose scope is as yet unknown, the Community reserves its right to comment on the sufficiency of the DEIS to support the proposed donation. With the limited amount of information presently available on the proposed donation and its impacts, it is impossible to determine whether the donation meets the clear Legislature intent that use of the trust water right program should NOT adversely affect other water rights. RCW 90.42.010 provides in part, "It is the intent of the legislature that persons holding rights to water, including return flows, not be adversely affected in the implementation of the provisions of this chapter." Similarly, a trust water right may be exercised, "only if the department first determines that neither water rights existing at the time the trust water right is established, nor the public interest will be impaired." RCW 90.42.040(4).

[2] The Community has two agreements with CWA – the 2009 Agreement Regarding Lake Tapps Between Cascade Water Alliance and the Lake Tapps Community (the "2009 Community-CWA Agreement"); and the 2004 "Agreement Regarding Reservoir Management between PSSE and the Lake Tapps Community" (the "2004 Community-PSE Agreement"). Per the 2009 Community-CWA Agreement at §1.5.2, until certain conditions are satisfied the 2004 Community-PSE Agreement remains in effect. Provisions for the right of first offer appear in each agreement. *See* 2009 Community-CWA Agreement at §11 ("Project Assets" here refers to a definition of "Transferred Assets", which include water rights, in the PSE-CWA asset purchase agreement); and 2004 Community-PSE Agreement at §§8.1 – 8.4 and Exhibit B (water rights included as Project Assets).

considerations of the public interest. Re-balancing could occur only in the very narrow circumstance where one of CWA's key agreements is invalidated.

S2-29920 (B).

- Para. 8 - The Community Council supports this provision for adaptive management.

Investigators report for S2-29920.

- Page 15: This map designates Bonney Lake in two locations, one south of the lake and one north. The northern designation is incorrect and should probably refer to Auburn or Sumner.

- Page 16: § 3.2.3 has a good history of recreational use, and the next section accurately characterizes historic reservoir operations.

- Page 18: The Community Council disagrees that the 2005 communication from NMFS to USACE "superseded" the "agency flows".

- Page 19 – Here and on page 44, the document indicates that the recreational season per the Community's agreements with CWA and PSE represent a lengthening of the time period for normal full pool. This is not necessarily the case. In years past, the reservoir was sometimes kept full beyond October.

- Page 82: The report projects that climate change will cause a 38% decrease in summer flows by 2075. Page 83: The report discusses the very large magnitude of error associated with modeling impacts of climate change. The Community Council believes that these points relating to climate change support both the adaptive management approach set forth in Paragraph 22 of Draft ROE S2-29920(A) and a "go-slow" approach to any donation to the Trust Water Right Program.

CS2-160822CL.

- As noted on pages 9-10 and 12-13 here, and in the Investigation, recreational use dates to 1950s and rights were granted by deed. Thus recreational use is not a "new" use.

- Para. 19 requires CWA to apply for a donation to Trust Water Rights Program consistent with the Tribal Agreement. The Community Council objects to any requirement in the current ROEs reflecting CWA's agreement with the Tribes regarding Trust Water Rights Program for several reasons. First, by including this provision in advance of receiving an application, Ecology appears to prejudge the outcome. Second, the Community Council believes the terms of donation in the Tribal Agreement are too stringent and are likely to result in impairment. Third, the SEPA analysis in the DEIS of the proposed donation to the Trust program fails to provide an adequate analysis of the impacts of the donation; further SEPA analysis is required to determine whether the donation should be made. Finally, a permanent donation by CWA of water rights to the trust program might under some circumstances contravene CWA's obligations under applicable reservoir

management agreements to provide the Community with a right of first offer, prior to the transfer of certain project assets.

- Here too, Paragraph 22 seeks comment on a stakeholder proposal for adaptive management. Specifically, the proposal allows Ecology to re-balance competing public interests in the event that CWA's contractual framework for exercising the water rights is found to be contrary to the public interest. The Community Council supports this approach to adaptive management because the entire suite of rights is premised on overriding considerations of the public interest. Re-balancing could occur only in the very narrow circumstance where one of CWA's key agreements invalidated.

- Page 14 – The Community Council disagrees that the 2005 communication from NMFS to USACE "superseded" the "agency flows". The communication did not reflect a formal analysis or determination by NMFS.

Conclusion

The Community Council commends Ecology for a set of documents that, with minor revisions, will strike an appropriate balance among the many stakeholders involved in the issuance of water rights associated with Lake Tapps. The Community Council especially appreciates the leadership that CWA has demonstrated in working with the Community on a broad range of issues and its effective stewardship of the Lake on such matters as milfoil control. The Community looks forward to working with CWA in the years to come.

MUCKLESHOOT INDIAN TRIBE

Office of the Tribal Attorney
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June 30, 2010

Tom Loranger
Department of Ecology
PO Box 47600
Olympia WA 98504-7600

Re: Draft Lake Tapps Reports of Examination

Dear Mr. Loranger:

The Muckleshoot Indian Tribe appreciates the opportunity to comment on the draft Reports of Examination for the Lake Tapps Water Supply Project. Over the past several years the Cascade Water Alliance has worked diligently to address the Muckleshoot Indian Tribe's objections to the pending water right applications. Many of the Tribe's concerns have been addressed in agreements between Cascade and the Muckleshoot and Puyallup Tribes. These agreements include measures which will substantially mitigate the potential adverse impacts of the water rights sought by Cascade. The Muckleshoot Indian Tribe therefore withdraws its previous protest and objections to the pending water right applications on condition that the permits issued by the Department are consistent with Cascade's obligations under its agreements with the two Tribes.

The Muckleshoot Indian Tribe's comments on the proposed permit conditions and investigator's report follow. It should be noted that because the Tribe is satisfied with the proposed permit conditions except as noted below, the Tribe has not engaged in a detailed review of the analysis and justification provided by Department of Ecology in the Investigator's Report and Water Quantity and Quality Analyses prepared by Aspect Consulting. The Tribe's failure to address any portion of the Department of Ecology or Aspect's analysis and justification therefore should not necessarily be viewed as indicating agreement by the Tribe.

Comments on Proposed Permit Conditions

The Muckleshoot Indian Tribe supports the proposed permit conditions with the revisions suggested by the Cascade Water Alliance in its letter of June 16, 2010, with three caveats.

Condition 20. Emergency Operations [S2-29920(A) and CS2-160822CL]

Proposed Condition 20 which waives permit conditions pertaining to the operation of the Lake Tapps Reservoir to the extent that emergency conditions require, fails to define the "emergency conditions" that trigger a waiver. Cascade's proposed revision to Condition 20 while partially

addressing this omission fails to explicitly address potential water shortages caused by drought or long term climate change. As noted on page 20 of the Investigator's Report, in the event of a water shortage Cascade has agreed to a priority of use that places maintenance of White River instream flows first, followed by recreational reservoir water levels and municipal water supply. *See*, 2009 Community Agreement §3.2 and White River Management Agreement §§II.I.3 and II.I.4. Waiver of minimum instream flows and conditions designed to minimize diversions would therefore be inappropriate in the event of a water shortage whether due to temporary drought or longer term climate change. To avoid potential claims that a water shortage is an "emergency condition" triggering the waiver provisions of Condition 20 and to conform to Cascade's obligations under the provisions of the two Agreements cited above, the Muckleshoot Indian Tribe requests that an additional sentence be added to the end of Condition 20, so that the Condition with Cascade's proposed revisions reads as follows.

> 20. Emergency Operations.
> Permit conditions regarding or affecting operation of Lake Tapps Reservoir and related facilities do not apply and shall be waived to the extent that emergency conditions require or as ordered by a court or a state or federal agency with jurisdiction. The Permit Holder shall notify Ecology of any emergency operations in accordance with Condition 21. Emergency conditions mean a temporary circumstance or condition caused by a natural disaster, accident or physical damage, or other extraordinary event that is not avoidable by the exercise of reasonable diligence. <u>Emergency conditions do not include drought or long term changes in hydrologic conditions, or the need to divert water into the Lake Tapps Reservoir for either water quality or recreational purposes.</u>

<u>Condition 22. Adaptive Management [CS2-160822CL, S2-29920(A), and Condition 8 (S2-29920(B)]</u>

An adaptive management approach to the Lake Tapps permits was initially suggested prior to the conclusion of agreements between the Cascade Water Alliance and the Tribes, Cities, and Lake Tapps Community. In those agreements which are referenced in the Draft ROEs and Cascade's EIS, Cascade struck a carefully crafted balance among the objectives of instream flow maintenance, reservoir recreation, and municipal water supply, and established a priority of use for water in the event of future shortage. In light of that balance and the use priority which exists, there is no need for an adaptive management condition to address the possibility of future water shortages.

While an adaptive management provision is unnecessary, the Muckleshoot Indian Tribe has no objection to Condition 22 as proposed by the Department of Ecology which allows Ecology or the Permit Holder to convene a process to identify operational changes consistent with the proposed permit conditions and explore other measures such as those identified in the DEIS in the event of future water shortages. However, the Tribe strongly opposes the alternative adaptive management proposal which we understand has been put forward by individuals representing the Lake Tapps Community.

First, the Lake Tapps Community has negotiated an agreement with the Cascade Water Alliance that establishes the priority of use in the event of a water shortage, alleviating any need for an adaptive management plan to the address the issue.

Second, the Department of Ecology is charged with making its own independent public interest determination in connection with the issuance of a new water right based on the information available to the Department at the time of the water right decision. The Muckleshoot Tribe is aware of no authority that allows the Department to reserve the right to revisit its public interest determination at some indeterminate future date based on changed circumstances.[1]

In this regard while the Muckleshoot Tribe opposes the proposal to single out the Lake Tapps permits for inclusion of an unauthorized ad hoc public interest reopener, the Tribe would welcome legislative efforts to grant the Department of Ecology the authority to revisit water rights which due to changed circumstances may no longer be in the public interest. Such legislative authorization would allow the Department to generally insure that water rights once granted continue to remain in the public interest.

Third, the alternative adaptive management proposal appears to be crafted in a manner designed to invite and facilitate future efforts by the Lake Tapps Community to collaterally attack the instream flow conditions of the draft ROEs. This effort is particularly troubling in light of the Lake Tapps Community's agreement to accord priority to instream flows in the event of a water shortage. *See*, 2009 Community Agreement §3.2.

If an interested party believes that the proposed permit conditions may be detrimental to the public interest, the proper method of addressing that concern is through a direct appeal of the Department's decision within the statutory period. The Department lacks the authority to reopen its public interest determination at some indefinite future date based on changed circumstances. It should therefore reject the alternative adaptive management proposal that would undermine the carefully crafted balance among competing water uses reflected in the permit conditions and Cascade's agreements with the Tribes, Cities, and Lake Tapps Community.

Condition 1. Minimum Flow. **[**S2-29920(B)**]**

The manner in which mitigation water encompassed in the Regional Reserved Water Right will be put to use will not be fully known until a separate application for its use is submitted to the

[1] The Tribe notes that the alternative adaptive management proposal begins with a proposed finding that the instream flow conditions will not impair existing rights or be detrimental to the public welfare, and will serve overriding considerations of public interest. The proposed finding which appears to serve as a justification for the language that follows is perplexing as the Department is charged with determining whether the water rights being sought meet the elements of the four part test, and whether there are overriding consideration of public interest with the respect to those water rights, and does not make such determinations with respect to individual permit conditions.

Department. Because of this uncertainty the Muckleshoot Indian Tribe suggests that the Department include additional language at the end of the first sentence of Condition 1 clarifying that not only does Regional Reserved Water have no mitigation value at instream flows below the minimums, but that it also may not be used in a manner that reduces the flow below the minimums.

> 1. Minimum Flow.
> Regional Reserved Water has no mitigation value when flows are below the Minimum Flow established in Table 1, and its use shall not reduce the instream flow of the White River below the Minimum Flow in Table 1.

Comments on Investigator's Report

Page 6 -- Definition of Recommended Flow Regime – The definition erroneously states that the Recommended Flow Regime is equivalent to the minimum flow rates established in the WRMA. The Recommended Flow Regime is composed of the several elements including the minimum flows, diversion limits, ramping rates, and limitations on tailrace discharges, all of which insure that flows in the White River will usually remain substantially above the minimum instream flow rates. The Tribe requests that the following definition be substituted:

> Recommended Flow Regime -- The Agreed Flow Regime established in the WRMA that results from application of minimum instream flow rates, diversion caps, ramping rates, and limitations on tailrace discharge.

Page 16 – The first sentence on page 16 should be revised to indicate that Puget and now Cascade have continued to pay annual water power license fees under RCW Chapter 90.16, rather than FERC licensing fees.

Page 18 – 19 – The discussion of the Recommended Flow Regime erroneously suggests that it is equivalent to the minimum flows established in the WRMA. The Recommended Flow Regime as explained above in connection with its definition includes other measures (diversion limits, ramping rates, and tailrace discharge limits) which together insure that flows in the White River will substantially exceed minimum flows at most times. The Tribe suggests the following revisions to the discussion.

> 2. Recommended Flow Regime (WRMA)
> Second, Cascade would simultaneously operate the Project in a manner to provide enhanced flows in the White River consistent with the WRMA. The WRMA establishes an agreed flow regime for the White River, which limits diversion from the White River into Lake Tapps Reservoir. Specifically, Cascade would abide by the minimum flow rates established in the WRMA for the Reservation Reach of the White River, as measured at the Buckley gage, as well as, diversion limits, ramping rates, and limitations on tailrace discharges from the Reservoir. This agreed-upon ~~minimum~~ flow regime (referred to as

> the "Recommended Flows") would mimic the natural seasonal pattern in flow conditions to help improve fisheries resources and habitat in the White River and in the Lower Puyallup River. ~~The Recommended Flows in the White River would range from a high flow rate of 875 cfs in the late spring to a low flow rate of 500 cfs in late February, late summer, and early fall (see Table 2).~~ By letter to Ecology, Cascade requested that the Recommended Flows be incorporated into the Draft ROE (Cascade 2008c).
>
> So long as the Minimum ~~Recommended~~ Flows in Table 2 are ~~were~~ met, Cascade could divert flows at rates up to 1,000 cfs from the White River from mid-February through the spring and into early summer, 400 cfs from summer into the fall, and 150 cfs from late fall through the winter until mid-February.

The caption for Table 2 should be corrected to indicate that it represents the minimum flow rates in the White River that must be maintained as requirement for diversions into the Reservoir. Table 2 does not represent the Recommended Flow Regime.

Page 25 – Consistent with the comments submitted by the Cascade Water Alliance any portion of the Regional Reserved Water not authorized for use by December 31, 2030 should be cancelled, rather than relinquished.

Page 33 – The discussion of leakage through the penstock valves and gates should be updated to include recent efforts by the Cascade Water Alliance to eliminate leakage from the Reservoir through the penstocks.

Pages 58 – 59 -- The pH data presented in Figure 13 on page 59 are from Department of Ecology's ambient monitoring program. This limited grab sample data is insufficient to establish trends or to support the conclusion that no pH excursions have occurred since the cessation of hydropower diversions. The Tribe finds the sentence on page 59 that states, "A verification study (Ecology 2009a) is currently planned to reexamine the necessity of a TMDL…" to be troubling. The sentence is not relevant to the DROE and should be deleted. Moreover, the citation provided for this statement references Department of Ecology's 2009 Quality Assurance Project Plan for the Lower White River, which does not support the statement. To the extent that the Department adheres to the view that the necessity of a TMDL should be reexamined, the Tribe will address the matter separately.

Pages 86-88 – The manner in which mitigation water encompassed in the Regional Reserved Water Right will be put to use will not be fully known until a separate application for its use is submitted to the Department. Because of this uncertainty the Muckleshoot Indian Tribe questions the Department's ability to fully analyze the impact of this element of the program and reserves the right to comment on the impact and mitigation value of this program in connection with any future water right application by one of the Four Cities seeking to utilize Regional Reserved Water.

Page 89 – As noted at the beginning of this comment letter, the Muckleshoot Indian Tribe is withdrawing its previously stated protest and objections to the pending water right applications on the condition that the permits issued are consistent with Cascade's obligations under its agreements with the two Tribes.

Thank you for the opportunity to comment on the draft reports of examination.

Sincerely,

Richard Reich

cc: Muckleshoot Fish Commission
Cascade Water Alliance

LAW OFFICE
of the
PUYALLUP INDIAN TRIBE

June 30, 2010

Thomas Loranger
Section Manager
Water Resources Program
Department of Ecology
Southwest Region
P.O. box 47775
Lacey, WA 98504-7775

Re: *Comments on Draft Reports of Examination for Lake Tapps Water Right and Water Supply Project, S2-29920(A), S2-29920(B); S2-29934; R2-29935, CS2-160822CL, the Investigator's Report for S2-29920 and Water Quantity and Water Quality Analysis for the Lake Tapps Water Right Applications*

Dear Mr. Loranger:

The Puyallup Tribe of Indians (Tribe), a sovereign entity whose government is recognized by the United States, hereby submits its comments on the Draft Reports of Examination for the Lake Tapps Water Rights and the Water Supply Project (Draft ROE).

The Draft ROE includes three interrelated water rights and one water right change that the Cascade Water Alliance (Cascade) seeks from the Department of Ecology (Ecology). Collectively, these water rights are referred to herein as the "Lake Tapps Water Rights" or "Water Rights." Pursuant to these Water Rights, Cascade would: (1) divert water from the White River into the Lake Tapps Reservoir; (2) store water in the Reservoir to supply water for the Water Supply Project; and (3) withdraw water from the Reservoir for municipal water supply purposes.

The Draft ROE also includes a separate record for an inchoate, proposed mitigation right, to be granted at a future date and which may or may not ever be perfected. This proposed future uncertain water right is referred to in the Draft ROE referred to as the

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Regional Reserved Water Program (RRWP). For the reasons set out below, the Tribe does not believe Ecology can appropriately consider the RRWP at this time.

I. Introduction

In summary, the Tribe notes that the instant water right process began in 2000 with Puget Sound Energy's (PSE) original applications for three interrelated water rights to allow PSE to use its hydropower water right claim as a source of surface water for long-range municipal drinking water supply needs. Over the intervening seven years, following the appeal and subsequent PCHB remand of the 2003 ROE back to Ecology, the landscape has changed. One fundamental change is PSE's 2009 sale of its interests in the Lake Tapps Reservoir to Cascade. Another is Cascade's commitment to the 2009 White River Management Agreement (WRMA) and of most significance here is Ecology's recent issuance of the 2010 Lake Tapps Draft ROE.

The Draft ROE represents the culmination of years of effort predominately by Ecology, PSE, Cascade, the Tribe, and the Muckleshoot Indian Tribe (MIT) and also with local municipalities and the Lake Tapps Community. The Tribe believes that the hard work, of all participants, has paid off and that the current Draft ROE meets the ecological needs of the White River fishery, the recreational goals of the Lake Tapps Community, and long-range municipal water needs.

II. General Comments

In general the Tribe supports the Draft ROE, and in particular, the conditions related to: (a) maintaining minimum flows; (b) diversions to and releases from the Lake Tapps Reservoir; and (c) the associated ramping rates. The Tribe was particularly impressed with the positive level of analysis and effort that Ecology put into the water quality section and the climate changes section of the Investigator's Report. Overall, the Draft ROE evidences a thorough consideration of relevant data and an appropriate analysis of the balancing of interests.

However, the Tribe has several specific concerns regarding the Draft ROE that it would like Ecology to consider. The Tribe is concerned that the Draft ROE:

- Exceeds Ecology's Lawful Authority . The arbitrary inclusion of one stakeholder's proposed re-opener language in the Agency's Draft ROE;
- Improperly Approves Mitigation Water. The Agency's creation of a new type of water right—the Regional Reserved Water Program;

- Utilizes a Flawed Baseline. The use of a flawed baseline condition makes it impossible to accurately measure the impacts of the proposed project and associated water right applications; and;
- Includes An Overbroad Emergency Operation Waiver. The overly broad definition of Emergency Operations upsets the balance of interests under the Draft ROE.

Sections III and IV below set out the Tribe's detailed comments on the May 7, 2010 Draft ROE.

III. Specific Comments on Draft ROE for the Lake Tapps Reservoir Water Rights and Supply Project [Application S2-29920(A)]

A. The Proposed Adaptive Management Language Was Inappropriately Included in the Draft ROE.

The final paragraph of Condition 22 of the Draft ROE, is a comment submitted by an undisclosed stakeholder that Ecology simply decided to incorporate into its Draft ROE. Although Ecology noted that the Agency did not actually take the time to review the draft provision, the Agency nonetheless gave it heightened status and the appearance of approval. At best, the undisclosed stakeholder's comment, is a self-serving and inappropriate "adaptive management strategy" proposed by an undisclosed third party comment (Third Party Comment) that is not properly a part of the Draft ROE and should be deleted. Ecology is currently engaged in a deliberative regulatory process that demands fairness and a level playing field. It is both unwise and improper for Ecology to include the subject Third Party Comment in a decision-making document whether or not the proposed language has been thoroughly reviewed by Ecology.

Ecology's thoughtless act of including unanalyzed language in the Draft ROE is particularly onerous in light of the fact that the Third Party Comment has the potential to fundamentally alter the premises upon which the analysis of the Water Rights was based. Further, for the legal and policy reasons set out in Section III.A.1 below, the Tribe finds the Third Party Comment highly improper and that Ecology's reliance on the Third Party Comment would be an abuse of discretion and a violation of procedural due process of law. The Tribe strongly urges Ecology to strike the Third Party Comment from the Final ROE.

1. Adaptive management is a systematic approach for improving resource management, not a tool for the self-serving realignment of fundamental priorities.

Adaptive Management is a process; it is the systematic management of a project to deal with future uncertainty that relies on scientific methods to evaluate actions and outcomes to achieve specific objectives.[1] It is not intended to favor one party's interests over the others, or be used to resolve conflicts among stakeholders regarding management objectives.[2] Here, the Third Party Comment inserted by Ecology attempts to realign the project objectives, not achieve adaptability.

The adaptive management measures included in the Draft ROE as the first four paragraphs of Condition 22 (and in Section 12.3 of the draft EIS, and in the Conditions of the permit), establish the iterative process that will implement, monitor, reassess, and, if necessary, alter operational procedures to achieve the stated project goals. These goals are, in order of priority, to: (a) maintain Minimum Flows in the White River according to Condition 1; (b) maintain recreational water levels in the Lake Tapps Reservoir according to Condition 5; and (c) provide water for the Municipal Water Supply according to Application S2-29934 and the conditions of the Draft ROE.

True adaptive management measures properly focus on *operational changes* and are not intended to upset the carefully established objectives of the project. Thus, the Tribe does not object to the first four paragraphs of Condition 22. However, the Third Party Comment, set out in the last paragraph of Condition 22, is <u>not</u> part of Ecology's adaptive management strategy and should be deleted.

Cascade and Ecology have incorporated adequate adaptive management into the Draft ROE to address the potential uncertain impacts of climate change. Section 4.7 of the Draft ROE explains Ecology's consideration and analysis of climate change and the potential impacts of the project under climate-impacted conditions. Although predictions involving climate change are inherently uncertain, Ecology recognized these limitations and included mitigation and adaptive measures to facilitate effective management over the life of the water supply project.

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[1] "Adaptive management" means reliance on scientific methods to test the results of actions taken so that the management and related policy can be changed promptly and appropriately." RCW § 77.85.010(1) and RCW § 76.09.020(1).
" "[A]daptive management …relies on scientific methods to evaluate how well regulatory and nonregulatory actions achieve their objectives." WAC § 365-195-920(2)
"Adaptive management means a systematic process for continually improving management policies and practices by learning from the outcomes of operational programs." § RCW 47.60.005(1).

[2] *See* Byron K. Williams, Robert C. Szaro, and Carl D. Shapiro, Adaptive Management, The U.S. Department of the Interior Technical Guide, 2009 edition – updated; available at http://www.doi.gov/initiatives/AdaptiveManagement/TechGuide.pdf, at 11.

2. Ecology does not have the authority to reopen or modify an inchoate right.

Once a Permit has issued, the appropriator has a usufructuary right to "capture" and use water up to the specified amount for the specified beneficial use.[3] This inchoate water right is an "incomplete appropriative right in good standing that comes into being when the first step required by law for acquiring an appropriative right is taken. The inchoate right remains in good standing for so long as the requirements of the law are fulfilled."[4]

Courts have interpreted this section as creating both a duty owed by Ecology and a legal right for the applicant. In *Hills v. Department of Ecology*, the Washington Supreme Court stated that, "water applicants have the right under the statute to have their application investigated and decided upon" and that RCW 90.03.290 creates this right.[5] Thus, an applicant is entitled to a decision regarding their application, and should be able to rely upon that decision being final.

It would be improper for Ecology to include the Third Party Comment language in the Lake Tapps Water Rights because Ecology cannot modify an issued permit once the decision to issue has been made. Simply put, Ecology does not have authority to reopen and reconsider a final decision in the absence of a specific statute (or other authority) authorizing such action.[6] No such authority is applicable to the current matter. Moreover, the Washington Supreme Court has determined that "[o]nce an agency has made a decision, that decision normally may be changed only through the appellate process; otherwise *res judicata* principles would be violated."[7] Thus, any attempt by Ecology to revisit the decision to issue and or condition the vested water right, as the Third Party Comment suggests, would be beyond the Agency's statutory authority and *ultra vires*.

Further, Courts have held that Ecology has no authority to adjudicate competing water rights. Rather Ecology investigates applications for a permit to determine the availability of water and the existence of water rights, and issues or rejects the application

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[3] *See* Samuel C. Wiel, *Running Water*, 22 Harv. L. Rev. 190 (1908-1909); *Coffin v. Left Hand Ditch Co.*, 6 Colo. 443 (1992); *Rigney v. Tacoma Light & Water Co.*, 9 Wash. 576, 583, 38 P. 147 (1894); *Vernon Irrig. Co. v. City of Los Angeles,* 106 Cal. 237, 39 P. 762 (1895).
[4] *Dep't of Ecology v. Theodoratus*, 135 Wn.2d 582, 596, 957 P.2d 1241 (1998).
[5] *Hills v. Department of Ecology*, 131 Wn.2d 373, 399, 932 P.2d 139 (1997).
[6] *Postema v. PCHB,* 142 Wn.2d 68, 120-21, 11 P.3d 726 (2000) citing *Hall v. City of Seattle,* 24 Wn.App. 357, 362, 602 P.2d. 366 (1979)
[7] *Id* at 121 citing *St. Joseph Hospital & Health Care Center v. Dep't of Health,* 125 Wn.2d 714, 744, 887 P.2d 891 (1995).

based upon these determinations. Therefore, any attempt by Ecology to make a determination of competing rights would be *ultra vires*.[8]

Finally, the Third Party Comment purports to create a new-- extra-legislative--contractual balancing test that would purportedly allow the undisclosed stakeholder to challenge the terms of the water rights to be granted by Ecology pursuant to the Draft ROE. Lawmaking is a task for the Legislature; Ecology does not have the authority to give the Third Party Comment license to create a new legal cause of action where, as a matter of law, none currently exists.

3. The Third Party Comment is factually incorrect.

In making its determinations and finding that the proposed Water Rights will neither impair existing rights nor be detrimental to the public interest, Ecology evaluated and considered all the conditions, not just the instream flows of Condition 1, under which Cascade would be making beneficial use of the Water Rights. Thus, the first sentence of the Third Party Comment is inaccurate. Based on this fundamental error, the Third Party Comment goes on to incorrectly assert that "[t]his finding is based upon the unique balancing of interests and beneficial uses that is achieved through Cascade's agreements with key stakeholders representing a broad range of public interests and beneficial uses."

The Third Party Comment is fundamentally flawed. Ecology performed its own, independent analysis of the four factors, as required by RCW 90.03.290, in determining whether overriding considerations of the public interest will be served by permitting the new appropriation under 90.54.020(3)(a). It is Ecology's own analysis and balancing of the interests, as set out in the Draft ROE, Investigator's Report, and the Environmental Impact Statement (EIS), that provide the underpinnings of the Agency's findings, not the terms of the agreements[9] as asserted by the undisclosed author of the Third Party Comment.

4. Ecology's balancing of the public interests and beneficial uses is unrelated to the enforceability of any agreements.

The issuance of Ecology's proposed permit for the Lake Tapps Water Rights is an independent regulatory action and is not subject to the terms of any existing agreement

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[8] *Rettkowski v. Dep't of Ecology*, 122 Wn.2d 219, 227, 858 P.2d 232 (1993); *Opinion changed on other grounds* (1993)).

[9] The subject agreements are (1) the "White River Management Agreement Between the Puyallup Tribe of Indians, the Muckleshoot Indian Tribe and Cascade Water Alliance," (2) the "2009 Agreement Regarding Lake Tapps between Cascade Water Alliance and the Lake Tapps Community," and (3) the "Lake Tapps Area Water Resources Agreement between Cascade Water Alliance and the Cities of Auburn, Bonney Lake, Buckley, and Sumner", collectively the "Agreements."

among Cascade, the Tribes, the Cities, and/or the Homeowners.[10] The proposed permit is conditioned by express Conditions numbers 1 through 22 of the Draft ROE and it is the express Conditions (Nos. 1-22), not the terms of the various Agreements, that support Ecology's determination that the proposed appropriation is consistent with all of the statutory requirements that govern permit issuance. Thus, enforceability of the any of the Agreements[11] has no bearing on, and cannot serve as the basis for reevaluating the balance of public interests and beneficial uses.

5. The permit application process provided ample time, opportunity, and consideration of any protests, objections, and comments prior to issuance of the permit.

The application process for new allocations of surface waters includes multiple opportunities for interested parties and stakeholders to participate by lodging protests, making objections, and providing comments. All public input must be considered by Ecology in its investigation and determinations associated with the issuance of a permit. It is improper and inconsistent with procedural due process, for any one stakeholder to be provided with "a special administrative license" to have his written comments included within the body of the agency authored document, and thus provided with the premature and misleading appearance of agency approval.

This precipitous action, for the benefit of an undisclosed stakeholder, is particularly unsavory in the context of a complex, multiparty process that has gone on for seven years. The idea of including a "sleeper provision" in the Draft ROE that would essentially reopen a final decision by Ecology when all parties, including the undisclosed author of the Third Party Comment, have had ample opportunity to make their concerns heard and considered at the appropriate time – prior to permit issuance – is fundamentally unfair.

For the reasons described in detail above, the Tribe respectfully requests that Ecology exclude the Third Party Comment from the final ROE.

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[10] The Tribe notes that the until such time as the "2009 Agreement Regarding Lake Tapps between Cascade Water Alliance and the Lake Tapps Community" comes into force and effect pursuant to the terms of that agreement, the earlier 2004 agreement with the homeowners is in effect.

[11] Ecology is not party to any of the Agreements, thus Ecology's actions, analysis, and determinations operate independently from the Agreements. Generally, only the parties to a contract can sue to enforce the contract's terms. *Lobak Partitions, Inc. v. Atlas Constr. Co.*, 50 Wn. App. 493, 497, 749 P.2d 716 (1988). A third party may enforce a contract to which he is not in privity only if the contracting parties intended to secure to him personally the benefits of the provisions of the contract. *Id.* Further, the WRMA expressly disclaims any intention to create any third party beneficiary and expressly states that the Parties to the Agreement are the only ones with any right to enforce its terms. White River Management Agreement Between the Puyallup Tribe of Indians, the Muckleshoot Indian Tribe and Cascade Water Alliance (August 6, 2008) §II.T – No Third Party Beneficiaries.

B. Recommended Flow Regime Is Intended to Provide Higher Flows For Fish.

The WRMA is premised on the fact that the Agreed Flows (identified as Condition 1 in the Draft ROE and the "Recommended Flows" in the Investigator's Report), in conjunction with the other conditions, are collectively intended to achieve flows in the White River that are higher than the Recommended Flows, subject to the availability of water. Those other conditions have been incorporated into the Draft ROE and are: (a) limits on the maximum diversions from the White River into the Lake Tapps Reservoir (Condition 2); (b) limits on releases from the Lake Tapps Reservoir through the tailrace canal (Condition 3); (c) ramping rates (Condition 4); and (d) recreational lake levels (Condition 5). The Recommended Flows are minimum flows, but not the optimal flows for the White River fishery, and are merely intended to provide a minimum flow safety net for fish.

Collectively, all five conditions (Conditions 1 through 5) constitute the Recommended Flow Regime, which provide the overall greater benefit to the fishery and associated fishery habitat. As such, the definition of "Recommended Flow Regime" on Page 6 of 105 of the Investigator's Report should be corrected to be consistent with the definition on Page 9 of 105, which states:

> Recommended Flow Regime for the Reservation Reach of the White River, which includes minimum flow rates, diversion limits, and ramping rates. The Recommended Flow Regime was established in the White River Management Agreement (WRMA) negotiated between Cascade and the Puyallup Tribe of Indians and Muckleshoot Indian Tribe (Cascade 2008b).

Other sections of the Investigator's Report inaccurately describe the Recommended Flows or the Recommended Flow Regime. The Tribe's suggested revisions to specific sections are set forth below:

- Section 3.3.1: The second sentence of paragraph 2 should state: "The WRMA establishes an agreed flow regime for the White River, which limits diversion from the White River into Lake Tapps Reservoir, limits releases from Lake Tapps reservoir through the tailrace canal, and establishes ramping rates."

- Section 4.5.3: The second paragraph on Page 73 of 105 should be corrected to state: "Recommended Flows."

- Section 5.1.1: The Tribe proposes broadening the discussion of the benefits of higher minimum flows in the White River on Page 95 of 105 to address the flows under the Recommended Flow Regime, which will generally be higher than the Minimum Flows of Condition 1. The specific edits are as follows:

Higher Minimum Flows for the White River. Diversions from the White River for the Project would be required to comply with a new and more protective instream flow regime for the Reservation Reach of the White River (*see* Conditions 1 through 4). These flows and conditions were developed in conjunction with the Puyallup Tribe of Indians and Muckleshoot Indian Tribe, co-managers of the White and Puyallup River fishery[12]. The minimum flows established by Condition 1 ~~and~~ are equal to or higher than any minimum flow regime a federal or state governmental agency has recommended to date. These higher ~~minimum~~ flows resulting from the Recommended Flow Regime would protect instream flow and water quality in the Reservation Reach and Lower White and Puyallup Rivers during critical low flow periods.

- Section 5.1.3: Under the evaluation of benefits and harms to fish on Page 97 of 105, limitations on diversions to the reservoir and releases from the reservoir, and ramping rates, should be included as mitigation components that are targeted to improve fish habitat.

- Section 5.3.3. The last sentence of Section 5.3.3 at Page 100 of 105 should state as follows: "Based on the protections provided by the Recommended Flows Regime (which were established as a component of the WRMA between Cascade and the Muckleshoot and Puyallup Tribes)…"

C. Recreational lake levels are subject to the minimum flows established under Conditions 1, and well as the terms of Conditions 2 through 4.

Before Cascade can divert water into the Lake Tapps Reservoir solely for the purpose of raising the Reservoir water level to "Normal Full Pool," as defined and according to the schedule provided in Condition 5, Cascade must first meet the other conditions of the Water Right. Specifically, no diversions can occur unless and until: (a) the minimum flows are met (Condition 1); (b) all diversions comply with the schedule of maximum diversion rates (Condition 2); and (c) all diversions into and releases from Lake Tapps Reservoir must comply with ramping rates (Condition 4). Accordingly, the

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[12] The Puyallup Tribe and the Muckleshoot Indian Tribe serve as co-managers, along with the Washington State Department of Fish and Wildlife and the federal fishery agencies, to study, preserve and protect the fishery resources of the Puyallup and White Rivers. The native salmon of the Puyallup River basin are of great spiritual and cultural significance to the Tribes. Accordingly, the Tribes have acted independently, and in conjunction with state and federal agency partners, to study and implement extensive efforts to preserve and enhance the fishery and fish habitat both within the exterior boundaries of their respective Reservations and within treaty protected usual and accustomed fishing areas. *See United States v. Washington*, 384 F. Supp. 312 (W.D. Wash. 1974), *substantially aff'd in part rev'd in part,* 520 F.2d 676 (9th Cir. 1975), *cert. denied*, 423 U.S. 1086 (1976) ("Boldt I"); *United States v. Washington,* 506 F. Supp.187 (W.D. Wash 1980), *vacated* 759 F.2d 1353 (9 th Cir. 1980) *cert. denied*, 474 U.S. 994 (1985) and *Washington v. Washington State Commercial Passenger Fishing Vessel Ass'n,* 443 U.S. 658 (1979).

Tribe supports the revisions to Condition 5 put forward by Cascade in its June 16, 2010 letter to Ecology (Cascade Comments), a copy of which is attached hereto as Exhibit A and which is by this reference incorporated herein.

In addition, Section 5.1.1 states that the "Projects *includes commitments to* provide recreational water levels from April 15 to September 13 (*see* Condition 5)..." at Page 94 of 105, italics added. The "includes commitments to" language should be deleted to ensure that Section 5.1.1 accurately reflects the conditions of the Water Right.

D. Condition 19. Trust Water Donation.

Condition 19 requires Cascade to submit an application to Ecology for the permanent donation of a portion of the water right claim to the State's Trust Water Program. The purpose of this condition is to insure that the portion of the original PSE water right claim, not otherwise used for water supply purposes or used to meet recreational lake levels (as defined and conditioned in the ROE) is secured for the purpose of instream flow. The Tribe notes that any Trust Water Donation will be structured in such way to honor all three Agreements.

E. Condition 20. Emergency Operations.

In the event of an emergency condition, Cascade should be relieved from those requirements of the Water Right permit that interfere with Cascade's ability to respond to the emergency condition. However, the event that gives rise to an emergency condition should be defined narrowly as a sudden event, such as an earthquake or a volcanic eruption. The need to provide additional diversions into the Lake Tapps Reservoir for recreational or water quality purposes should not be defined as an emergency condition. The Tribe supports the revised language to Condition 20 in Cascade Comments, with the addition of the following sentence, "Emergency conditions do not include droughts or long term changes in hydrologic conditions, or the need to divert water into the Lake Tapps Reservoir for either water quality or recreational purposes."

F. The Baseline Conditions Upon Which the Project is Evaluated are Inappropriate.

The Baseline flows upon which this project and the applications are evaluated are based upon flows developed as part of an application for continued operation of hydropower facilities. An assumption is made that these flows would apply if the Cascade water supply project were not moving forward and there were no further pending water right applications. This is simply false. The Tribe strenuously disagrees that the reservoir, Lake Tapps, would remain and continue to withdraw water from the White River because there is no water right for such withdrawals without a beneficial use. Using a baseline premised on flows that assume further withdrawals to maintain the

reservoir at recreational levels is erroneous since there is no water right to support such withdrawal of water from the White River. However, in the end, the Tribe believes that, when taken as a whole, the conditions of the Draft ROE, and in particular the minimum flows established by Condition 1, the limitations on diversions (Condition 2) and releases from the reservoir (Condition 3), the ramping rates established by Condition 4, and the lake levels established in Condition 5, will ensure that the Lake Tapps Water Right is sufficiently protective for fish.

G. Comments on Section 4.5 Fisheries.

1. The description of the existing conditions of fish habitat fails to address the degraded conditions of the components of the Project that effect fish passage.

Section 4.5.1 (Page 67/68 of 105) fails to adequately describe the diversion dam in terms of its detrimental impacts to fisheries resources. In particular, the degraded condition of the dam results in flows that spill over and through the dam to create multiple attraction points for adult and juvenile fish. This in turn leads to repeated injury, delay and mortality for fish attempting to move upstream.

Similarly, the description of the Fish Passage Structures on Page 68 of 105, fails to address the numerous shortcomings of a facility that is now 70 years old. The trap was not designed to accommodate the number of fish that now pass through the facility on an annual basis. Due to its antiquated design, the facility causes injury to fish and delays fish migration. In addition, the U.S. Army Corps of Engineers lacks the necessary number of trucks to move large volumes of returning pink and coho salmon, during the peak of their seasonal returns. Likewise, the brail and hopper mechanism need to be larger to allow for more rapid loading and turnaround of tanker vehicles.

2. Insufficient details are provided in regard to the fish screen facility in the diversion canal.

The successful recovery of the three ESA listed species, as well as all other salmonids in the White River, is dependent upon the effectiveness of this fish screen. This component of the project is far too important to ignore or gloss over in the Draft ROE. The only condition of the Draft ROE that addresses the diversion canal fish screens requires maintenance of the screens so they may continue to meet or exceed their design specifications and applicable state and federal requirements.

The Tribe believes the ROE should specify that yearly maintenance and testing must be conducted on the fish screens to ensure the screens are meeting or exceeding their design specifications and applicable state and federal requirements.

3. The Puyallup Tribe has studied Bull Trout within the White River for a number of years.

The discussion of bull trout in Section 4.5.1 states that "little is known about their use of the White River system." Pages 70-71 of 105. This statement is not accurate. The Tribe has collected data on bull trout for number of years, including length, weight, age, DNA, redd location, spawning time, water temperature and telemetry data. The Tribe suggests that Ecology revise the statement that "little is known" about the bull trout and cite the most recent report on bull trout completed by the Tribe, a copy of which is included with this letter as Exhibit B and incorporated herein. This data should be included in the Draft ROE.

4. Additional Citations

The discussion of the White River Reservation Reach (Page 73 of 105) should cite to the Herrera Reports from 2004 and 2006 completed for the Tribe, as well as the hydraulic analysis and HEC Geo RAS of the Reservation Reach. These reports detail the relationship between mainstem flow, side-channel flow and wetted area.

IV. Specific Comments on ROE for the Reserved Regional Water Rights Program [Application S2-29920(B)]

The Regional Reserved Water Program (RRWP) purports to leave 7 cfs (Qa) and 10 cfs (Qi) in the White River to be used at some uncertain time in the future, prior to 2030, by the cities of Auburn, Bonney Lake, Buckley and Sumner (Four Cities) as mitigation water for some unknown impacts identified in some yet to be filed applications for new water rights or changes to existing water rights. The Tribe has significant concerns regarding the purported use of a not insignificant volume of surface water flow, in a dynamic and fluctuating river. This is a situation where minimum flows have been established under the WRMA-and the pending water right-may not always be met. Use of surface flow for the poorly defined purpose of mitigating uncertain impacts from the withdrawal of ground water in hydraulic continuity with the White River is an unsound practice and is a significant concern to the Tribe.

Pursuant to the terms of the WRMA and the conditions of the Water Right, all flows in the White River not diverted by Cascade are to remain in the White River and be dedicated to instream flow through donation to the State's Trust Water program, or another vehicle. Thus, by setting aside 10 cfs to be used by the Four Cities at some point in the future, the RRWP would effectively diminish the residual flow that would otherwise be dedicated to instream flow, thus reducing available habitat for fish.

The Tribe also has concerns from a procedural standpoint of creating a mitigation mechanism in one water right to be used in another water right, or water rights, for which application has not been made. The Water Code states, in pertinent part:

> When an application complying with the provisions of this chapter and with the rules of the department has been filed, … it shall be its duty to investigate the application, and determine what water, if any, is available for appropriation, and find and determine to what beneficial use or uses it can be applied. RCW 90.03.290 (1), underline added.

Therefore, Ecology is obligated to investigate a proposed appropriation at the time an application is made. In this case, an application *may* be filed with Ecology by one of the Four Cities that may apply for a new water right, or a change to an existing right, at some unknown time in the future prior to December 31, 2030. To the extent that water from the White River is utilized as mitigation for some yet-to-be applied for water right, the analysis and investigation is premature as it should take place when an actual water right application is made. Therefore, the practical effect of the RRWP, is to prejudge a portion of a future water right application based upon the modeling and analysis for the Lake Tapps Water Right. Thus, it should not and cannot be a foregone conclusion that the use of Regional Reserved Water is available for future mitigation.

To the extent that the RRWP may create some inchoate water right to the Four Cities, the Tribe objects to its issuance as a component of the water rights for the Lake Tapps Water Supply Project. Further, it is the Tribe's understanding that until such time as a future water right for one or more of the Four Cities is approved by Ecology, (which adequately analyzes the impacts of that withdrawal and determines that the RRWP provides adequate mitigation for such withdrawal), all rights and entitlements to the Regional Reserved Water shall remain with Cascade until December 31, 2030. Therefore, any portion of the Regional Reserved Water, not properly authorized for use by Ecology by December 31, 2030, will be cancelled and the surface waters shall remain dedicated to instream flow.

The Tribe is also concerned that use of the RRWP could cause or exacerbate excursions of surface waters below the Minimum Flows established under the Water Right and the WRMA. Accordingly, the Tribe requests that the draft Report of Exam for Application S2-29920(B) be revised to clarify that Regional Reserved Water shall not be available when the Minimum Flows are not met. The Tribe suggests the following language to be added to Condition 1:

> Regional Reserved Water has no mitigation value when flows are below the Minimum Flow established in Table 1, and its use shall not reduce the instream flow of the White River below the Minimum Flow established in Table 1.

Compliance with the Minimum Flows shown in Table 1 shall be measured at USGS gage 12099200 – White River above Boise Creek at Buckley, or other appropriate gage established by the Permit Holder of S2-29920(A) in accordance with the conditions of that water right.

V. Conclusion

The Tribe appreciates this opportunity to provide its comments on the Draft ROE. By submission of these comments, the Tribe reserves all of its rights and does not waive or diminish its reserved water rights or its treaty-protected rights and entitlements.

Sincerely,

Lisa Brautigam

Lisa Brautigam

cc: Puyallup Tribal Council

Movement and Spawning Distribution of Bull Trout within the White River, Washington

Puyallup Tribal Fisheries Department

Russ Ladley, Eric Marks, Maria Parnel, Andrew Berger, Terry Sebastian, and Blake Smith

May 2007

Introduction

Despite being listed as threatened under the Endangered Species Act by the U.S. Fish and Wildlife Service (USFWS) in 1999, bull trout (*Salvelinus Confluentus*) life history patterns in the South Puget Sound have received little examination. Specifically, information concerning the reproductive phase of fluvial bull trout is entirely absent.

Beginning in June 2006, the Puyallup Tribal Fisheries Division initiated a tracking study of bull trout in the White River to examine the extent and timing of bull trout spawning migration. Bull trout are routinely observed at the Army Corps of Engineers (ACE) Buckley Fish Trap facility (rkm 39.1) which provides an ideal location to collect and sample anadromous fish. The Corps constructed the fish trap in 1941 to provide fish passage above the Mud Mountain Dam (rkm 47.6) flood control project which was completed in 1947. Trap records for the past 10 years reveal an annual average of only 38 (range 29-49) bull trout. Prior to this time, records for Chinook, coho and steelhead are available but fish counts for all other species are not consistent. References to Dolly Varden are occasionally found in older trap records. However, results of recent genetic analyses for char samples collected at the Buckley trap and elsewhere in the Puyallup River system indicate that only bull trout have been positively identified to inhabit the White River and Puyallup Rivers (Baker et al. 2003) and that reference to Dolly Varden is incorrect.

The majority of bull trout are observed in the trap between June and July which coincides with peak runoff in response to melting snow. However, bull trout may be encountered at the trap year around.

For this study, the USFWS authorized the Puyallup Tribe to surgically implant ten White River bull trout with radio transmitters. Nine of these fish were followed to their spawning grounds while one was never heard on the air following its release and is suspected of having a failed transmitter.

In the White River, several non-glacial tributary streams host spawning bull trout each fall, but no information exists of glacial mainstem spawning. The goal of our study was to identify specific spawning locations throughout the White River basin and determine whether bull trout utilize glacial mainstem reaches for

spawning. In addition, we investigated environmental factors that may influence movement and timing as they migrate towards their spawning grounds. Highly turbid water conditions are characteristic of summer flows in the White and all other glacial origin streams originating on Mount Rainier. Poor visibility effectively precludes direct observation of redds and fish during the late summer and early fall spawning period.

Some of the findings of this study include an expanded range of elevation where bull trout spawning occurs, an extension of the active spawning window and the discovery of additional tributary streams with significant spawning activity.

Study Area

The White River is the largest tributary to the Puyallup River which discharges into Commencement Bay in southern Puget Sound near Tacoma Washington (Figure1). The White originates from the Winthrop, Emmons and Fryingpan glaciers on the Northeast corner of Mount Rainier and located within Mount Rainier National Park (MRNP). The watershed elevation ranges from 10 m at its confluence with the Puyallup River to 4392 m at the summit of Mount Rainier, drains an area of 1220 km^2, and has a mean annual flow of 41 m^3/s measured near Buckley, Washington (USGS gage 12098500). Three primary non-glacial tributaries; Clearwater (sub-basin area 10,117 ha), Greenwater (19,676 ha) and Huckleberry Creek (9,782 ha) collectively host the majority of anadromous fish spawning in the White River watershed and enter the system upstream of Mud Mountain Dam. Both the Clearwater and Greenwater Rivers originate within federally protected wilderness areas before entering a mixture of private and federal timber lands. Huckleberry Creek originates within MRNP before entering national forest lands of the Mount Baker Snoqualmie National Forest at rkm 11.5.

The White River has incised its valley in the last few thousand years through mud flows and glacial deposits (Collins and Sheikh 2004). These mudflow deposits continue to influence the West Fork and mainstem White and also extend upstream into the Greenwater and Huckleberry Creek valleys. Glacial sources for the upper White and West Fork are responsible for sand and fine silts which provide the characteristic coloration and tremendous sediment transport volumes. Dunne (1986) estimated the sediment load ranged from 440,000 to 1,400,000 tons annually between 1974 and 1976. Cooler air temperatures in mid to late September begin to freeze the glacial margins and sediment sources reducing the supply of fine silt which reduces turbidity levels.

A second dam located at rkm 39 and downstream from Mud Mountain dam is owned and operated by a private utility which operated the 60 MW White River hydro-electric project from 1911 through 2004. The diversion of up to 2000-cfs flow from the river as well as the cyclical release and storage of water from the reservoir to the powerhouse for generation purposes has had a profound effect on fish populations and their habitat. At this same location the ACE operates the

Buckley fish trap and haul facility to shuttle migrating fish upstream to a release point at rkm 54.

The river segment between the diversion dam and tailrace return canal is commonly referred to as the bypass reach and is 33.1 km in length and subject to water withdrawal, minimum flow, habitat desiccation, and sediment sluicing in response to upstream activities at one or both dams. The river segment downstream of the return canal is subject to thermal and nutrient loading from the Lake Tapps sub-basin which serves as the hydro-electric project reservoir (Ebbert 2003). In addition, some 8.4 km of river exist between the two dams which are only accessible to adult fish that fall back after being released from the tank truck.

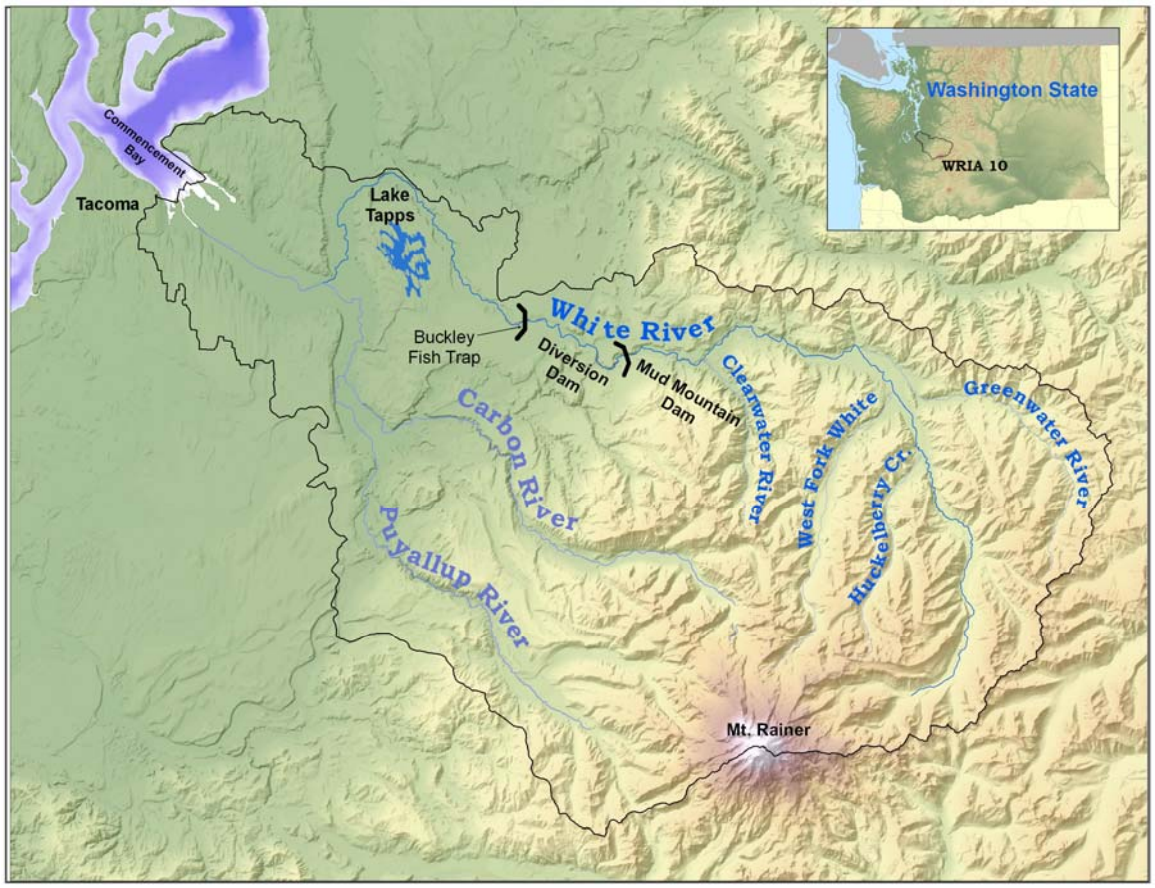

Figure 1.

Methods

Captured fish were anesthetized in a solution of 75 mg/l of tricaine methanesulfonate, measured for fork length (mm) weighed (g), scales were taken for age classification, DNA samples were collected from the anal fin and a Floy tag was inserted in the dorsal musculature. Each radio-tag was activated and verified for proper frequency and code prior to implantation. We used Lotek

model NTC-4-2L radio transmitters which measure 8.3 mm in diameter and 18.3 mm in length and weigh 2.1g. We chose high frequency (148.340 MHz) radio tags programmed with an 8 second burst rate to afford an estimated 178-day battery life. The surgical tagging implant procedure followed a modification to Ross and Kleiner (1982). Radio transmitters were inserted through a ventral incision and the antennae exited from a second posterior incision.

Bull trout were allowed to recovery for 24 to 72 hours in a 2200 liter fiberglass tank located at the White River Hatchery and provided with a constant flow of 95-l/min well water at 10º C. Following recovery, fish were loaded into an oxygenated and insulated 500 l tote. They were then transported by vehicle and released 32 kilometers upstream of the capture location.

The ACE operates a 3800 liter tanker truck to transport all species collected at the trap upstream of Mud Mountain Dam. To avoid stress and injury associated with the load and transport process as well as injury from much larger Chinook salmon which are being transported simultaneously, bull trout tagged as part of our study group were transported independently. The tank truck fish release site used by the Corps is located at rkm 55 but we returned tagged char at rkm 72. This location was selected for its convenience and ease of access.

The ten fish in our study group were tagged and released between June 2 and July 14, 2006. Tracking efforts ensued immediately following the release of the first tagged bull trout and were repeated at least twice per week as additional fish were added to the study group. Radio-tracking was performed on foot, by raft, car and on three occasions by helicopter. During tracking events a Global Positioning System (GPS) receiver was used to record the location of maximum signal strength. Redd locations were also captured on GPS. Redd locations were converted to elevations by transferring lat./long. coordinates to a USGS 10 m digital elevation model.

Hourly water temperatures were recorded at three tributary stations where spawning occurred with Onset Hobo data loggers. Daily temperature and turbidity data was collected at the Buckley Diversion Dam by the ACE. Daily discharge information for the White River was obtained from the USGS gauging station at rkm 44.9 near Buckley, Washington.

Results

Radio tagged bull trout were acquired an average of 17 times after release (range 8-22). Seven of nine char were tracked to redds and two others were observed in proximity (<100 m) of redds but were not actually observed on them. Spawning activity (presence of fish on or near redds) was observed beginning Sept 5 in No Name Creek through October 4 in both Hidden Springs Creek and Parallel Creek. Residence time on or near a redd ranged up to three days. Only

one of our study group fish (#39) remained in its spawning tributary (Fryingpan Cr.) after spawning, the remainder exited immediately.

Bull trout movements varied from protracted holding to steady upstream progress with rates as high as 17.7 km per week (Figure 2). Movement was often punctuated with holding periods ranging up to four weeks. A male and female bull trout (#30 and 31) were captured and tagged on June 27 at the Buckley Trap. They then moved upstream at a similar rate where they were filmed while paired on a redd in No Name Creek on September 5, 70 days after being released.

Males were more likely to linger in the mainstem in close proximity of the tributary confluence after spawning but post spawning movement by females was characterized by rapid fallback downstream. Fish #33 demonstrated the most dramatic fall back rate. After ascending into Fryingpan Creek it moved downstream and spawned in Klickitat Creek then moved into the mainstem White and during a seven day period from Sept. 27 to Oct 3 traveled downstream 34 km below both Mud Mountain and the Buckley Diversion dams. Fish #49 also exhibited rapid downstream movement covering 30.5 km in six days. Fish #49 was radio tagged on June 5th which was the fourth year in a row observed and transported from the trap. Trap arrival dates during previous years for Fish # 49 were May 31, 2005, June 23, 2004 and July 7, 2003.

Bull trout used for this study ranged in length between 375 to 561 mm and weighed between 841 and 1795 g (Table 1). Scale data indicated these fish were predominantly 5 year olds however four of ten scale samples were unreadable.

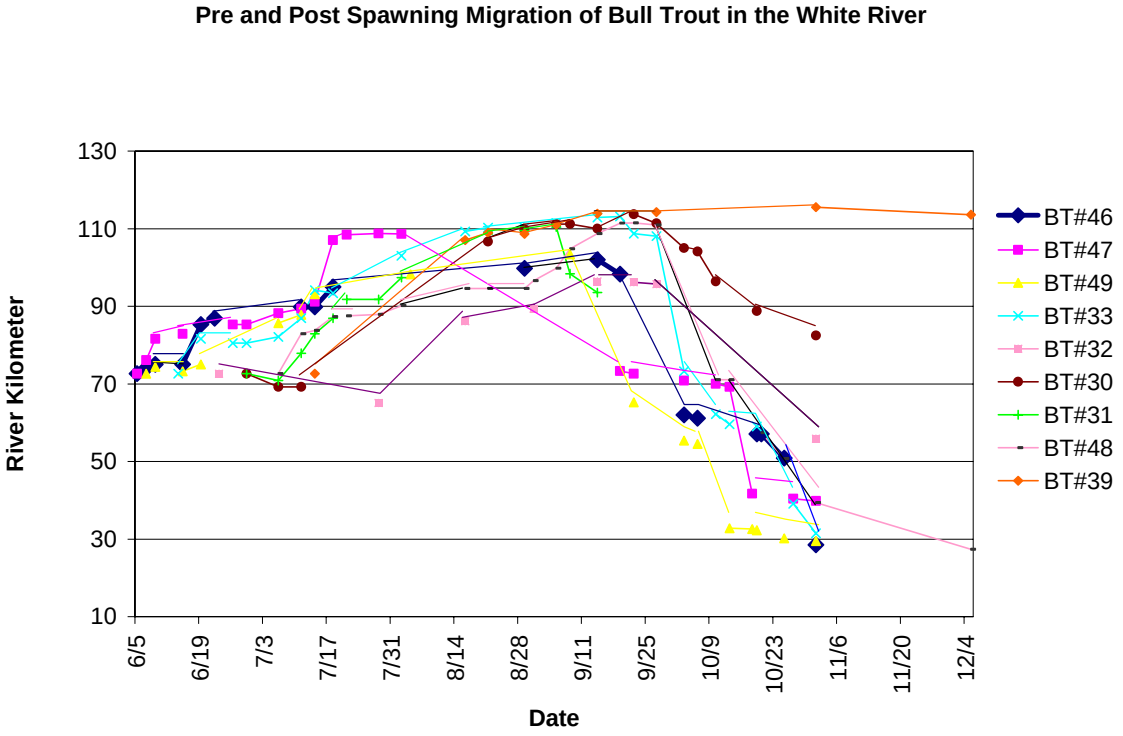

Figure 2.

Tag #	Date Tagged	Date Released	Length (mm)	Weight (g)	Age	Last Encounter	Notes	air time (days)
46	2-Jun	5-Jun	507	1433	5	1-Nov		152
47	2-Jun	5-Jun	444	841	5	1-Nov		152
49	5-Jun	7-Jun	561	1795	5	1-Nov	third recapture	149
33	13-Jun	14-Jun	438	950	R	1-Nov		141
32	21-Jun	23-Jun	500	950	R	1-Nov		131
30	27-Jun	29-Jun	525	1570	R	1-Nov		127
31	27-Jun	29-Jun	375	648	R	14-Sep		79
48	3-Jul	6-Jul	430	920	3	5-Dec		155
39	12-Jul	14-Jul	491	1247	5	5-Dec		146
34	5-Jul	6-Jul	395	663	3	7-Jul		1

R for age indicates a regenerated scale – undetermined age

Table 1.

Only one radio tagged fish spawned outside MRNP and was found near the mouth of Silver Creek (elev. 786 m) which is located less than 1.0 km from the northern MRNP boundary. The mouths of Silver Creek and Silver Springs Creek are less than .2 km apart. Five bull trout redds from bull trout outside our study group were observed in Silver Springs Creek. Elevations of 43 observed bull trout redds ranged from 786 to 1166 m (mean 970 m, SD 92) (Figure 3).

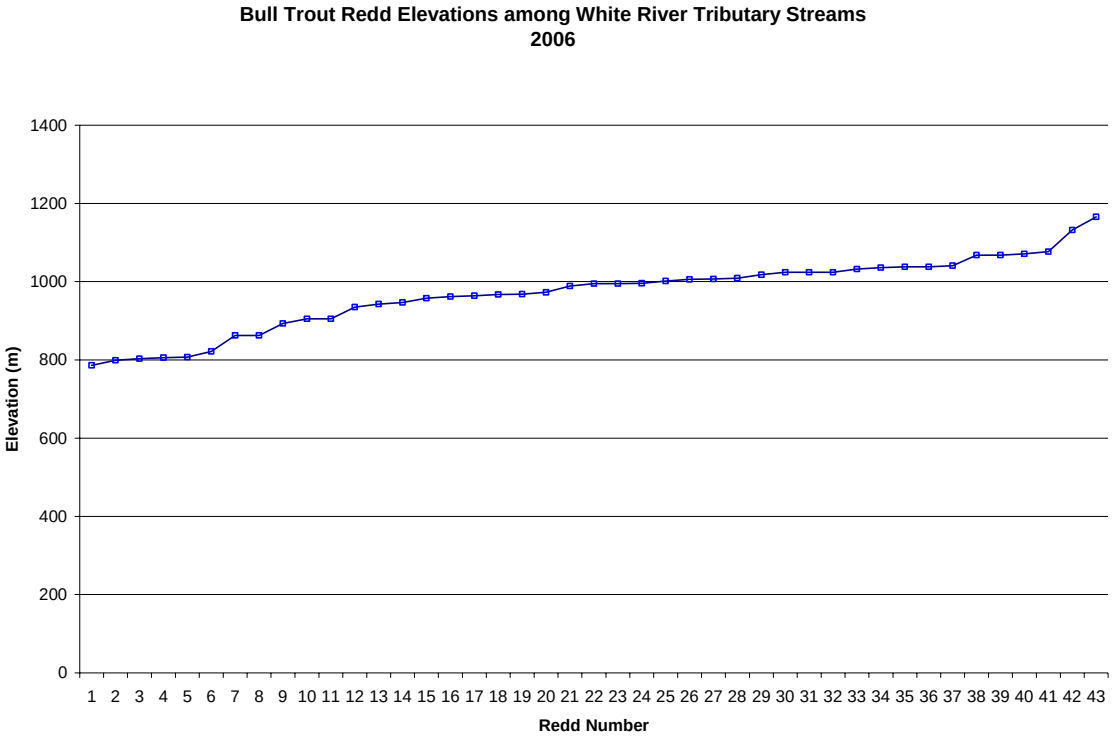

Figure 3.

The highest elevation redd was observed in Fryingpan Creek which was the only glacially influenced stream where spawning activity was found. In terms of flow rate, it was also the largest stream where spawning occurred and the redd was located approximately 1 km upstream from the mouth. This fish had ascended another 1km to an impassable barrier falls before dropping back to its redd location. The second highest redd elevation (1132 m) was discovered while tracking fish #49 to Lodi Creek, a right bank tributary of the West Fork White River.

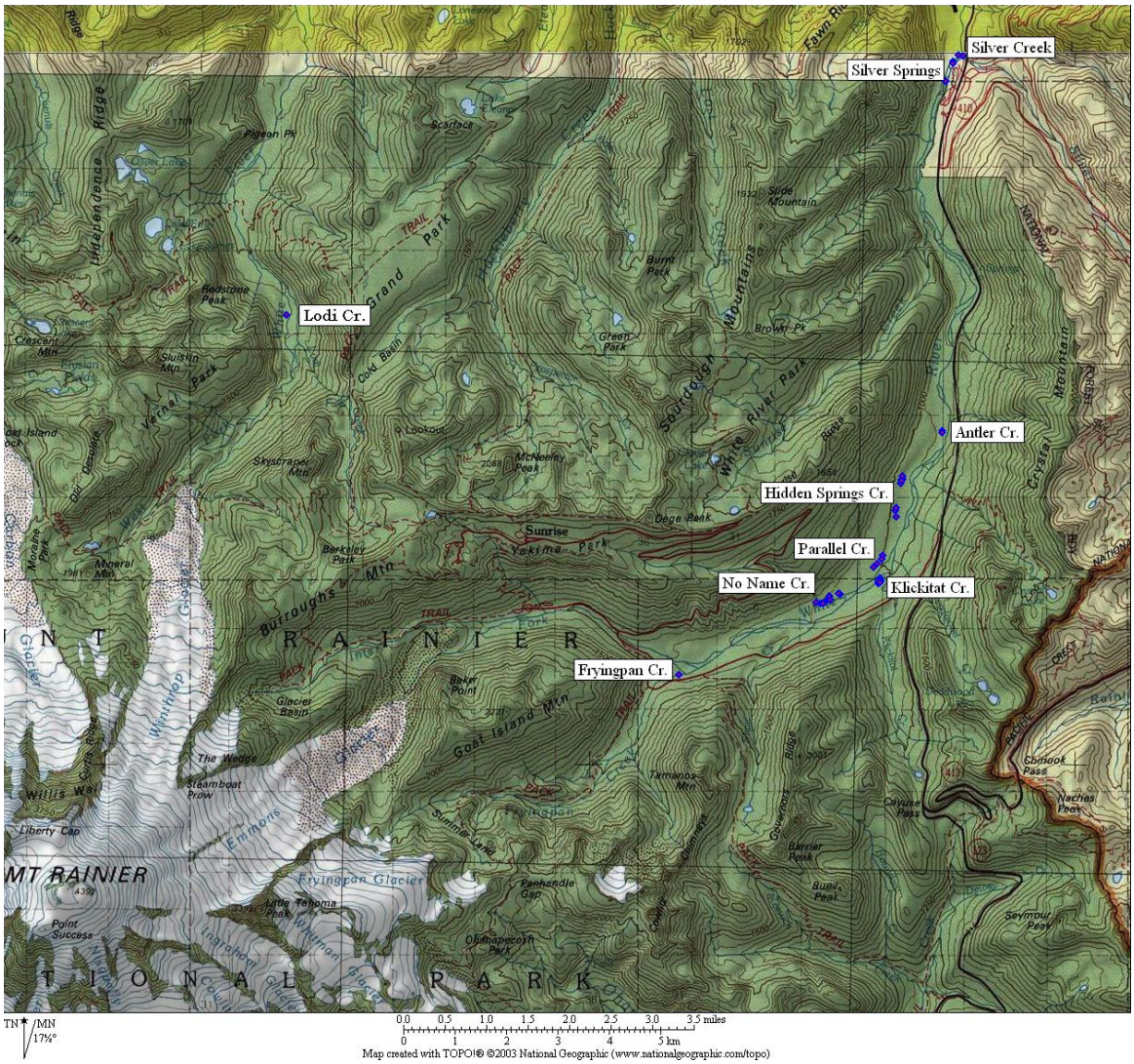

Figure 4.

The preponderance of redds (33 of 43, 77%) were clustered along a 3 km reach of the White between No Name and Hidden Springs Creeks (Figure 4).

Although only limited temperature dated was collected for this study, entry timing of spawning bull trout to both No Name and Klickitat Creek appears to be associated with a sudden decline in water temperature (Figure 5).

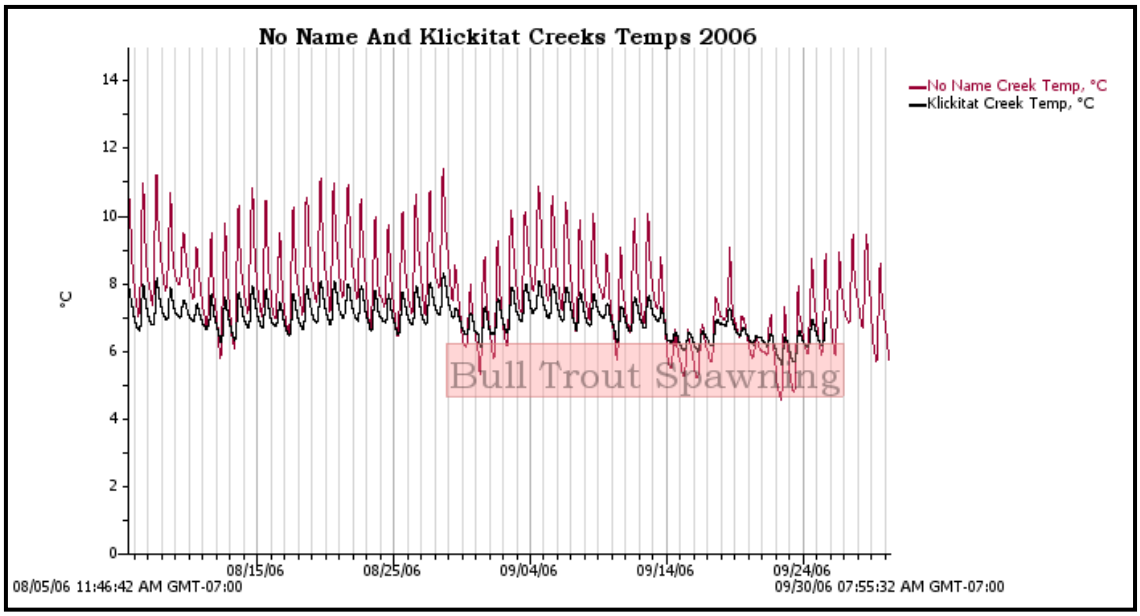

Figure 5.

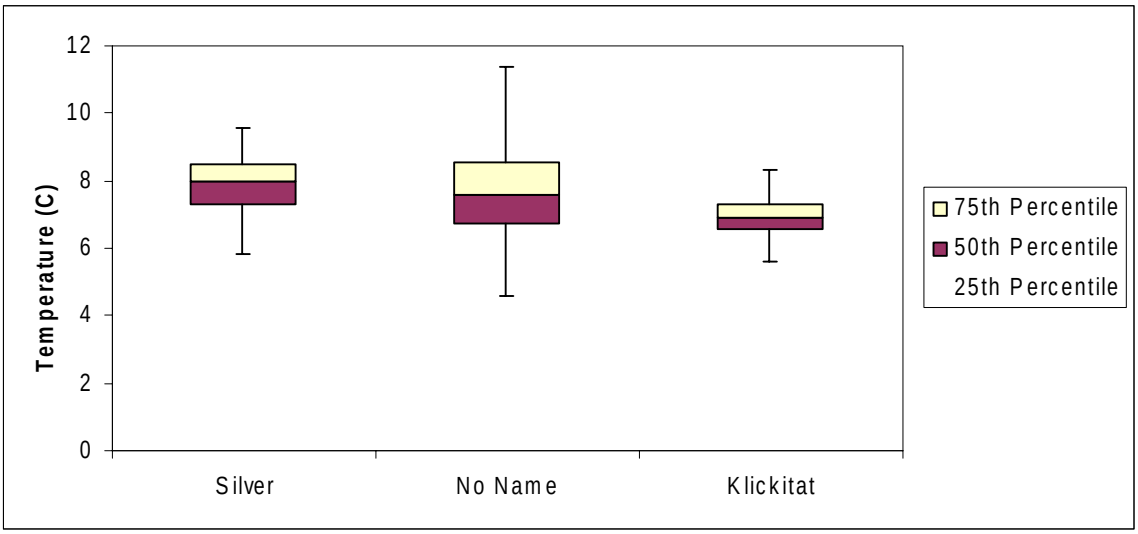

Figure 6.

Smaller resident bull trout outside our study group were observed from Fryingpan Creek downstream to Antler Creek. On two occasions fluvial and resident type fish were observed paired on a redd. This observation was made at both No Name and Hidden Springs Creeks. Hidden Springs Creek hosted the largest number of bull trout redds (10) of any tributary closely followed by Klickitat (9) and No Name Creek (8). Forty-one of 43 (95%) redds observed were in low gradient (< 2% slope) channels. Two of 43 (5%) were found in step-pool channels (3-7% slope). Most (36 of 43) redds were located within 500 meters of the confluence of the mainstem river.

Tributary entry and spawning time was simultaneous in No Name and Klickitat Creeks despite the greater temperature range exhibited in No Name Creek (Figure 6). The mean temperature of Silver Cr was 7.9 compared to 7.7 and 6.9 at No Name and Klickitat Creek respectively. The only spawning observed in Silver Creek (fish #32) was observed September 27, three weeks after spawning commenced in No Name and Klickitat despite a mean temperature difference of 1.0 and 0.2 ºC respectively.

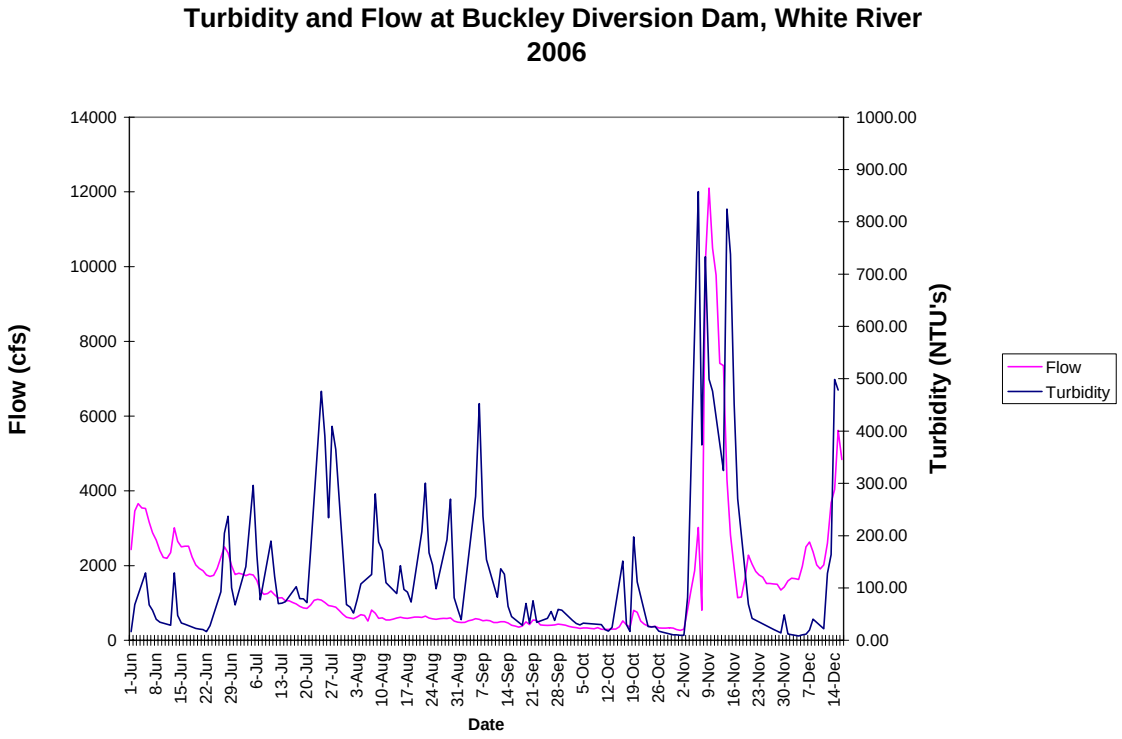

Figure 7.

Three of our nine study group fish remained upstream of the Diversion Dam after mid-November when the transmitters started to fail. Only one fish (#39) remained in the upper watershed after spawning. The rest moved down at varying rates. The furthest downstream position noted before transmitter power failed was shared by four fish near rkm 29 which is 3km downstream of the White River hydroelectric project's Fish Screen Facility return outlet.

Measurements of mainstem White River turbidity collected at the Diversion Dam from June 1 to Dec 15 average 138 NTU's (range 9 to 858) and compared with flow measured near Buckley (USGS gage 12098500)(Figure 7) demonstrated no significant correlation.

Discussion

This is the first study performed to describe temporal movement patterns of adult fluvial bull trout within the White River. The upstream migration and spawning time of fluvial bull trout appears to be closely linked to water temperature based on the uniformity of spawning elevation and the absence of spawning activity amongst low elevation reaches.

The loss of contact and the duration of contact loss with some fish moving up the White River was sporadic but most pronounced when fish passed between Huckleberry Creek and Ranger Creek (rkm 85.3-95). Bull trout have an affinity for deep pools and maintaining close contact with bottom structure (Goetz 1989; Pratt 1992). Because of this tendency and the relatively small radio-transmitters we selected for this work it is plausible that channel confinement and valley wall topography lead to signal bounce and/or dead spots for ground based reception.

No established gauging stations currently operate upstream of Mud Mountain Dam so a formal record of flow conditions is not available. Both the White River and the West Fork are glacial origin streams with high bedload volume and characteristic anastomozing (wandering) stream channels. Although large tree and wood pieces are recruited from MRNP, even large, old growth timber is regularly mobilized due to the steep channel slope and force associated with high flows. Perhaps this unstable, dynamic nature of the stream bed throughout the glacial mainstems precludes bull trout spawning. Protracted incubations periods of bull trout eggs and the susceptibility of change to channel morphology may diminish redd viability within mainstem habitat (Weaver and Fraley 1991). The absence of mainstem spawning in the upper White River upstream of Huckleberry Creek is consistent with survey findings for other salmonid species (Marks et. al. 2006).

Observations of small bull trout outside our study group were common. We suspect these fish comprise part of a larger resident/residual population that does not exhibit in-river (fluvial) movement but rather reside year-around within the upper-watershed. These fish are noticeably smaller in size (approx. 250 mm) but have been observed paired-up on redds with larger fluvial fish. The presence of multiple life history forms including resident, fluvial and anadromous are part of the diverse life history structure of bull trout populations (Reiman and McIntyre 1993; Northcote 1992).

The Buckley Fish trap itself is size selective due to the brail floors gap width and effectively retains only those fish greater than 25 mm in width or approximately 275 mm in length depending upon body type. Therefore, it is plausible that smaller individuals exhibiting fluvial migrations are effectively restricted to the river downstream of the trap until they attain sufficient size.

Perhaps the most intriguing finding of this study was the absence of bull trout utilization among the three primary non-glacial tributaries; Clearwater Greenwater and Huckleberry Creeks. Despite the elevation similarities among head water reaches, none of the fish in our study group showed an affinity for these sub drainages. Credible sources indicate that bull trout are occasionally found or caught while sport fishing in these tributaries but these fish may be foraging as opposed to seeking spawning habitat. However, a study group of only nine fish precludes drawing any conclusions.

Temperature is the most common factor cited for influencing bull trout distribution (Reiman and McIntyre 1993). Bull trout in our study group displayed no tendency to hold in the spawning tributaries and preferred to escape to the cover provided by greater flow and turbid conditions of the mainstem immediately after spawning.

Turbidity levels as low as 4 nephelometric turbidty units can inhibit visual observation of spawning salmon (Cousens et al. 1982; Lloyd et al. 1987; Koenings et al 1986, 1990). Although we did not find a correlation between flow and turbidity, higher levels may provide preferable cover compared to the shallow spawning tributaries. No Name and Klickitat enter on opposite sides of the White River less than 1 km apart. Although both streams flow entirely within old growth forest, No Name is a south facing drainage which explains the greater daily temperature fluctuations compared to Klickitat Creek (Figure 6). Whether or not a specific temperature threshold triggers tributary entry or if merely a cooling trend will suffice remains unclear.

Perhaps interspecific competition among species is responsible for limiting bull trout survival and/or spawning site selection. Among the eight tributaries where bull trout spawning was observed, only Silver Springs Creek is known to afford a temporal overlap of spawning. Spring Chinook, pink and coho all utilize this stream for spawning with coho typically the last to spawn. For all other tributaries spatial and temporal isolation among species appears to be intact.

Results from this study did not indicate whether or not some portion of White River bull trout exhibit anadromy. However, as described by Northcote (1984, 1997), bull trout within a population can exhibit a wide range of seasonal and life history migration strategies. In the future we hope to utilize transmitters with greater battery life to observe the duration and extent of residence within the lower White and Puyallup Rivers. Presumably some percentage of White River fish will utilize marine areas for foraging. Currently, the ACE is using acoustic tagging technology to track marine movement of White River bull trout as well as from other Puget Sound area streams.

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turbs

8.6	MIN
857.8	MAX
138.5	MEAN
167.4	STD